



研究プロジェクト計画

- 気候変動
- 都市環境管理
- 森林保全
- 環境教育
- 環境ガバナンス

Reserch Project Plans

- Climate Change
- Urban Environmental Management
- Forest Conservation
- Environmental Education
- Environmental Governance

IGES 1998 - 2000 Research Plan

1.Objective

The primary objective of this research project is to provide strategy and policy analysis to national policymakers, international negotiators, NGOs and the private sector on critical climate change issues arising out of the Kyoto Protocol of the United Nations Framework Convention on Climate Change.

2.Background

The problem of global climate change has emerged as one of the most urgent issues of contemporary society. At COPIII of the UNFCCC, held in Kyoto in December 1997, countries agreed to limit greenhouse gas (GHGs) emissions from Annex I Parties (industrialized countries) in the years from 2008-2012. In order to implement these emission limitations, the Kyoto Protocol focused on both domestic policies and measures and created some new international instruments which allow Annex I Parties to meet some of their emission limits by implementing mitigation measures in developing countries under a framework of international and regional cooperation.

The future share of global GHG emissions from Asian countries, is forecasted to be the highest in the world on a regional basis, stimulated by rapid industrialization, economic expansion and population growth. In order to encourage Asian countries to develop along a path which results in lower GHG emissions, effective plans for cooperation among Asian region should be developed immediately. Plans for cooperation on climate change within the Asian regions should be developed within the international framework created by the Kyoto Protocol such as the Clean Development Mechanism (CDM) and Joint Implementation.

In addition, financial and technological assistance from mid-level developed countries in this region is becoming available. Effective plans for strategic cooperation based on specific conditions in the Asian region will greatly contribute to acceleration of the FCCC process. National climate change response strategies of each developing country should also contribute to the country's long-term development plan. By integrating climate policy concerns and economic planning at the current stage of economic development, sound environmental protection and conversion of the energy production system can take place along with economic growth.

IGES has held two preparatory meetings to develop a common view of what is going on in the international negotiating process, to penetrate through the academic channel to each national policy by promoting collaborative research and by presenting its research output in a timely manner worldwide.

3.Areas of Strategic and Policy Analysis

The climate change working group plans to carry out research in the following areas:

1.Urgent policy needs in preparation for UNFCCC COP IV

(1) Institutional framework for the implementation of Emissions Trading (ET), Joint Implementation (JI) and the Clean Development Mechanism(CDM).

- a. Clear idea of the definition of CDM;
- b. Linkage between different types of flexibility mechanisms, such as CDM, Joint Implementation and emissions trading;
- c. Development of institutional features of monitoring, reporting, enforcement, and verification mechanisms;
- d. Assessment of the current knowledge and experience on baseline determination in order to formulate recommendations and criteria for JI/ CDM baseline.

(2) Other institutional and policy issues remaining after COPIII such as technology assessment, technology transfer, financing and broader participation.

2.Mid-term research agenda

- (1) Integration of climate change policy and national energy, economic and pollution control priorities in the developing countries.
- (2) Multilateral funding mechanism including how technology is assessed to transfer under the mechanism (comparison with other existing multilateral funding mechanisms).
- (3) Reporting, verification, monitoring, enforcement, non-compliance and the consequences of noncompliance under the Kyoto Protocol.
- (4) Modalities for involvement of the private sector in implementation of the Kyoto Protocol.
- (5) Developing country's initiatives and potential for future participation

3.Ongoing research area

- (1) Analysis on economic structural change using dynamic economic models
- (2) Technology assessment and diffusion for climate policy; in particular,

appropriate technology

(3) Possibilities for new and renewable energy resources

(4) Kyoto Protocol and the climate change agenda: Does regionalism make sense in Asia-Pacific?

- a. Possibility of Asian bubble.
- b. Regional funding mechanism, operational entity for CDM.
- c. Regional institutions for regionalism

4. Research Methods

In order to achieve the objectives of this research project, we intend to carry out the following activities:

1. Carry out strategic and policy analysis on the issues listed above
2. In cooperation with institutes in China, Korea and India, convene workshops to share the results of the research at several stages in the process
3. Prepare reports for publications to distribute by traditional and electronic channel of communication
4. Establish an effective network for collaboration among research institutes in the region
5. Facilitate the development of effective climate change policy on the national and international level

5. Results to be Achieved

Strategic and policy analysis on critical climate change issues in the Asia-Pacific region is provided to national policymakers, international negotiators, NGOs and the private sector resulting in the development of effective institutions, laws and policies to prevent and mitigate climate change on the national, regional and international level.

6. Collaborating Institutions

Institutes in the Asia-Pacific region and other regions dealing with climate change issues including but not limited to Tata Energy Research Institute, the Chinese Energy Research Institute and the Asian Development Bank.

7. Dissemination of Results

IGES will provide information to national policymakers and international negotiators by means of written publications, internet and workshops in the

occasion of influential international meeting, e.g. FCCC, IPCC, Eco Asia, APEC and through cooperative activities with international organizations.

1. Background

● *Cities as microcosms of environmental problems and solutions*

Cities are microcosms in which the most intensive interaction between human activities and the environment takes place. Changing the development patterns of cities is the key to the solution of not only local but global environmental problems such as climatic change. Cities are the test place of new policies, and successful policies in one city can be disseminated to the cities in differing countries.

● *Economic development and urbanization in Asia*

Cities in Asia are undergoing rapid transformation propelled by economic growth. The last few decades of the 20th century witnessed rapid economic development, urbanization and environmental changes in Asia. Nations such as China are achieving astounding economic growth at an annual rate of nearly 10%, riding the wave of industrialization. The investment for economic development is mainly made in cities, and the influx of population to cities is accelerated, attracted by increased job opportunities and richer life. Widening income gaps between urban and rural areas further encourage the immigration into urban areas, pushed out of poverty in rural areas.

● *Environmental problem in Asian cities*

We can notice two different types of environmental problems in Asia: problems of developing urban areas, and problems of less developed rural areas. It is in cities that the contrast of light and shadow of economic development is seen most clearly: cities enjoy more of most of the fruits of industrial development, while facing various environmental problems arising from strains of economic growth. In an early development stage where expansion of industrial production is of primary importance, factories are concentrated in cities, causing serious air and water pollution. Moreover, the improvement of urban infrastructures such as water supply, housing, roads, sewerage system and waste collection and treatment system does not catch up with the excessive concentration of population and rapid expansion of urbanized areas. Particularly, the increasing automobile traffics and the delay in constructing public transportation systems are causing traffic congestion and air pollution in many Asian cities. The urban population who cannot benefit from the economic growth is also increasing, causing various problems which are deeply rooted in poverty and the distortion in income distribution.

● *Necessity of improving the governance in urban environmental management*

Looking at the historical pattern of economic development and the occurrence of

environmental problems in Asian cities, we can notice many similarities among them. As the economy develops, environmental problems take place. Then the environmental management and the problem solving capacity of cities are also improved. In many cases, however, the problems spread faster than the measures taken against them. As a series of new problems appear, there is no time to catch up with them, largely due to the inadequate administrative and financial capabilities. As to the legislation and standards, it is necessary to improve their implementation in terms of effectiveness and efficiency. Thus the improvement of the governance in urban environmental management system is one of the common policy agenda of Asian cities.

● *Experience of Japanese cities: its efficacy and limitations*

From the historical and geographical standpoint, various environmental problems which Japanese cities have experienced can be presented as a typical example, or reference frame of common issues for many Asian cities. Some Japanese cities faced most serious and typical urban environmental problems, prior to other cities in Asia. Enforcement of strict regulation, and large investment in control technology and the establishment of urban environmental infrastructures have achieved significant improvement of the environmental quality in Japanese cities. However, there are a number of unsolved problems, such as air pollution by automobiles and increasing household wastes. Review and evaluation of the experience of the Japanese cities should be made in order to draw lessons which will be suggestive to other Asian cities, demonstrating their efficacy and limitations, and successes and failures.

● *Challenges and opportunities*

The Asian cities must face new challenges such as energy saving for limiting the emission of greenhouse gases, and establishment of recycling systems, in addition to the traditional problems such as air and water pollution control. The Asian cities which pursued material richness by economic development must make new challenges for realizing energy-efficient cities, lifestyles with less environmental loads, and resource recovery and recycling. They may benefit the advantages of the latecomers as they can utilize the know-how and technology which are already available in the cities in industrialized countries. Moreover, economic development and industrial production expansion in many Asian countries will provide new opportunities for them to improve financial and technical basis for urban environmental management. Best utilizing these favorable conditions, they must create environmentally sound urban development models which will not merely follow the past development patterns of the cities in the West.

● *New viewpoints required for improving urban infrastructures*

Urban infrastructures such as public transportation, sewerage and waste treatment systems are essential to improve the urban environment. The fund raising for those urban infrastructures should be established according to the present situation of the Asian cities. With regard to technology, use of small-scale

decentralized local technology should be encouraged in combination with large-scale centralized technology which has been traditionally adopted in Japan and other countries. Promising examples of such technology may be solar and biogas energy, and new information communication technology. In conjunction with the establishment of these technological systems, reform of socioeconomic systems should be studied in order to reduce the environmental loads of urban activities.

2.Objectives

The final objective of this project is to present innovative ideas and models which will guide the urban environmental management policies in the trend of economic development in Asia toward the next century. For this objective, we should first of all file the experiences of environmental management in different countries, and draw lessons clarifying successes and failures, based on the comparative assessment and evaluation of the past experience and present situation of urbanization and environmental problems in various Asian cities. Then we should demonstrate concrete examples of policy tools, institutional arrangements, technological options, urban planning, infrastructure provision, financial mechanisms, etc. in order to ensure improved urban environmental management.

The project will collect and analyze relevant data and information to support the related works. This exercise will improve the information basis about urban environmental management systems (or "environmental governance") which will be useful for central and local governments, citizens, and businesses to adopt more effective and efficient policies. It will also enhance the information exchange among countries and cities about their experience in urban environmental management

Another objective of the project is to make a critical review of the Japanese experience in urban environmental management. The technical, legal and social measures adopted in Japanese cities for environmental management may provide useful information to other Asian cities which are undergoing rapid industrialization and suffering from industrial pollution. We should analyze the effectiveness and limitations of Japanese approaches and discuss the applicability

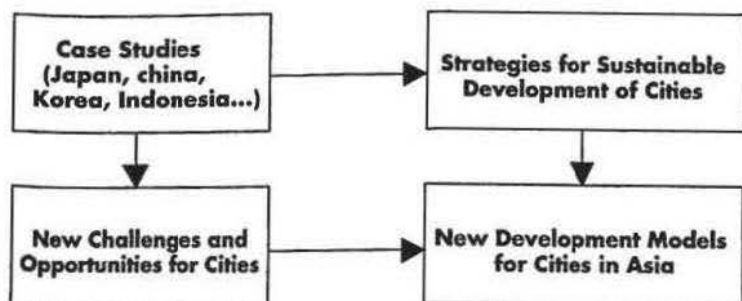


Fig.1 Objectives of the Project

and transferability of Japanese models to other cities in Asia. We should also examine the recent effort of Japanese cities to create new models of urban development based on eco-technology, eco-businesses, and changing consumer attitudes and behaviors.

3. Content and Method

3.1 General

The output of the projects (i.e., reports) should be useful for central and local government authorities, private companies, citizens, NGOs, etc. The project should be conducted in close communication with other IGES projects, inter alia, project on "environmental governance". The project will give special attention to the relationship between industrialization and urbanization which are taking place concurrently in many Asian cities, and seek for the cooperation with IHDP-IT project. The project should emphasize its uniqueness and comparative advantages, avoiding duplicative efforts with related projects conducted in other organizations.

We will select the cities for case studies from the countries, and collect relevant information and data concerning the past experience and the present situation in respective cities. The research consists of site research, data collection according to common questionnaires, and provision of data by local experts and a series of workshops. For this exercise, we will ask participation of local experts from case study cities. Then, we will examine new models for environmentally sound urban development and present strategies to achieve it.

3.2 Study Items

- a. Comparative study on the past experience, current situation, and mechanisms of urbanization and environmental problems in Asian cities

Case study cities will be selected among cities subject to rapid economic development, population increase and land use change. Then, we will identify environmental problems currently occurring, and economic and social mechanisms causing such problems, and quantify the relationship between the population growth, expansion of economic activities and industrial production, motorization, change of consumers' lifestyles and changes in environmental qualities. We will look at the change in land use in cities and their surrounding areas and analyze the structural change such as expansion of built-up area and decrease in farmland. At the same time, we will review the history of urban infrastructure improvement and analyze their achievement and shortage. We will review the successes and failures in urban environmental management practices and discuss the measures to be taken for the future, and analyze the effectiveness and limitations of legislative and administrative systems, technology, and socioeconomic systems in coping with the problems.

- b. Cities in industrial transformation: past experience and new models for urban development and environment in Japan

Industrial production is the basis for economic development of cities, especially for industrial cities. Cities have different environmental problems and adopt different system of environmental management, depending upon the types of industries located in their areas. In Japan, for example, it was the industrial cities specialized in heavy and chemical industries that experienced the most severe industrial pollution problems in the course of rapid economic development in the 1960s. Those industrial cities, however, have been transformed to business cities which rely more on service industries rather than manufacturing industries. Moreover, even in the industrial cities, the main industry shifts to high-tech industry such as information /communication industry. In the manufacturing industry, on the other hand, more attention is paid to resource recycling and "zero emission" technology, and there is a great possibility of new environmental businesses and eco-industry. Using the Japanese industrial cities such as Kitakyushu City as a model, we will analyze the content of current industrial transformation, and study the possibilities and limitations of applying such a model to other Asian cities.

The change in the industry leads to changing behaviors of consumers who are at the downstream of economic system. The changing lifestyle in Asian cities toward more abundant use of resources and energy is reminiscent of that in Japan in the past rapid economic growth period. This change is extensive and rapid and it is of great significance for environmental management in cities. Therefore, we will analyze the relation between the diffusion of durable goods, change of dietary habits and the change of housing conditions such as space/air-conditioning and the increasing environmental loads generated by cities, and discuss measures for transforming the current mass consumption development pattern to a more sustainable one.

The result of this research will be submitted to IHDP (International Human Dimensions Programme) Industrial Transformation Project.

c. Strategies for improving urban infrastructures: mass transportation, sewerage, waste management, and water and electricity supply

To improve urban environment, it is essential to establish infrastructures such as transportation system, sewerage system, and waste collection, treatment and disposal system. In Asian cities, the construction of business buildings and roads are rapidly advancing, but the improvement of urban environment infrastructures is delayed due to the financial difficulties. We should present strategies for establishing more effective and efficient urban environmental infrastructures, taking into account the economic and technical conditions in which the Asian cities are placed.

We will analyze the environmental loads generated by economic activities of the cities in terms of the use of materials and energy and the amount of waste generated from the industrial activities and citizen's life. Then we will identify the necessary levels of urban infrastructure improvement to achieve the environmental targets. If the urban environmental infrastructures are to be improved to the level of today's Japan, an enormous fund will be required. We

will discuss technical and financial feasibility and the goal of environmental improvement, assuming options such as the case where the centralized systems as adopted in Japanese cities are to be established, the case where the decentralized systems are preferred instead of the centralized systems, and so forth. Finally we will try to present strategies for improving urban environmental infrastructures which aims to establish more advanced recycle city, or "eco-city", than the traditional Japanese cities. Particularly, we will focus on the strategies for managing urban traffics by establishing public transportation systems, encouraging resource recycling and the use of natural energy.

d. Strategies for improving governance in urban environmental management

Asian nations have rapidly improved their environmental laws, regulation and standards. Cities are empowered to carry out city planning and control the land use. Thus the law and urban environmental management systems have been established in a sense, but they are not effectively enforced. Moreover, very little investment has been made for urban environmental infrastructures mainly due to the lack of fund. What is required for urban environmental management in Asian cities, therefore, is the improvement of environmental governance. We will study the present situation of the laws, regulations, standards and the environmental management system, sorting out the problem of environmental governance in Asian cities. Then we will present strategies for improving the governance in the urban environmental management, based on case studies and comparative analysis of Asian cities with respect to environmental legislation and its enforcement and implementation, administrative capabilities, financial tools and mechanisms and technological options.

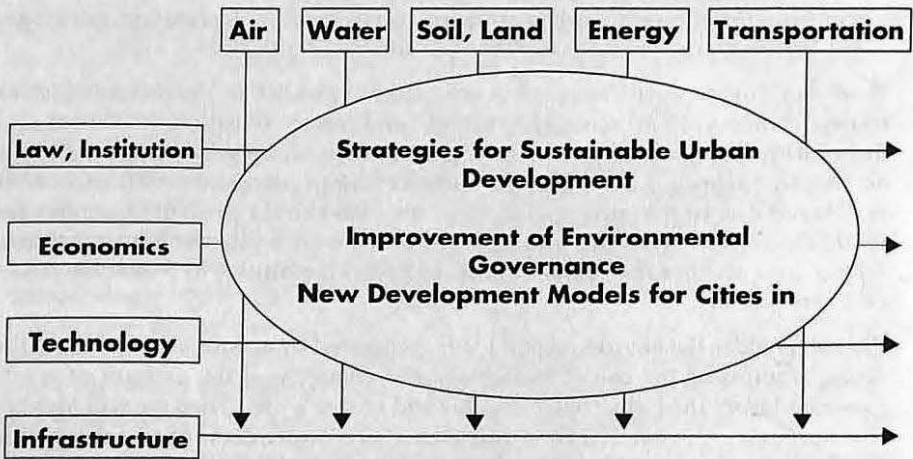


Fig.2 Scope of the Project

3.3 Case Studies

Case studies on some selected cities will play an important role in the project. Each case study will be consisted of the preparation of background paper by the local study team, and a review meeting in the city. From each case study city, a policy review paper will be prepared. Besides case studies, supplementary studies will be undertaken on intangible elements which can not be covered by case studies. Finally, the synthesis report will be prepared, integrating the major results of all relevant works including the results of case studies

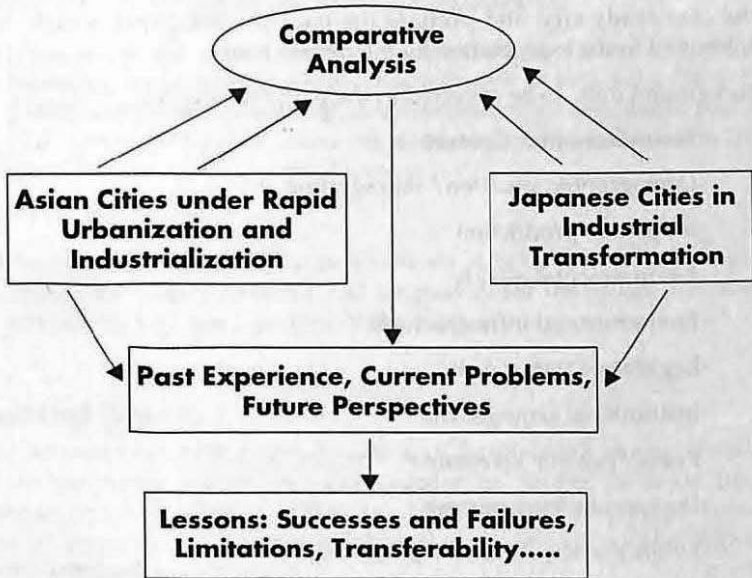


Fig.3 Case Studies

<< Guidelines for Case Studies >>

a. Criteria of selecting the case study cities

- Cities facing the most serious problems (e.g., most polluting city in the country), or cities requiring early countermeasures
- Cities which have typical experiences which can serve as lessons to other cities
- Cities which can serve as a model to other cities

- For each case study city, one or two major issues should be identified (ex., battles against pollution and promotion of "eco-industries" in Kitakyushu City)
- Regional balance
- Government support and basis of collaboration
- Data source and availability

b. Local study team and preparation of the background paper

- Form a local working team which will collect and analyze data relevant to the case study city, and prepare the background paper which will be submitted to the examination by the review team
- Background data to be collected in the paper (example)
 - Socio-Economic Context
 - Demographic situation/ immigration
 - Industrial production
 - Environmental quality
 - Environmental infrastructures
 - Legislative framework
 - Institutional arrangement
 - Public/private investment
 - Decision-making process
 - Public participation and awareness
 - Other relevant data
- Paper reviews the experiences of the city and demonstrates successful and non-successful achievements

c. Review meetings

- In each case study, hold a review meeting in the city with participation of IGES research team members, the related local and central government authorities, and other experts
- The meetings will review the performance of environmental management systems of the case study city on the basis of the background document
- Then prepare a policy report

d. Common basis of comparative studies

- Case studies should have common analytical basis
- For each city, take up one or two major issues of concern instead of dealing with many diverse issues (e.g., air, water, waste, energy, land, etc.)
- Driving force (Pressure), State, and Response; Cause-Effect Relationship
- Actions taken
- Policy instruments adopted
- How are they implemented and what are their achievements?
- Responses by government, citizens, businesses, etc
- What were the main causes of success and/or failure (e.g., legislative measures, institutional arrangement, economic factors, available technology, public and private investment, decision-making process, public participation and awareness, public relations, dissemination of information including newsletters, reports and books, etc.)

e. Policy review papers

- Policy review papers will be prepared after the review meetings, which should be policy-oriented and suggestive for the future direction of the environmental management of the cities.

4. Expected Results:

As the scope of research target is wide and far-reaching, the Synthesis Report will be prepared based on case studies in order to draw up policy recommendations to various parties. In addition, several policy reports on specific issues of concern will be prepared, and symposiums will be organized to disseminate the research result.

4.1 Synthesis Report

The expected formula of the synthesis report is as follows:

a. Comparative Analysis: The History and Current Situation of Urban Environment in Asia

- Summarize major findings of case studies and other related studies in a way that they will be useful for policy makers, and other stakeholders

b. Strategies for Achieving Sustainable Development of Cities

- Make synthesis of major results of all case studies and other related works
- Demonstrate innovative ideas and models to guide the urban environmental management

- Demonstrate innovative policy instruments to improve governance for urban environmental management
- New development patterns for sustainable cities (e.g., production and consumption patterns, lifestyles, institutions, technologies, economic instruments, education and information, etc.)
- Technology transfer
- Financial mechanism
- Strategies to take advantage of late-comers
- Networking all of stakeholders
- Inter-city cooperation
- Others

c. Recommendation for Actions

- More effective and efficient implementation of the management system
- Countermeasures for Air, Water, GHGs, Wastes, Energy Conservation
- Urban infrastructure improvement
- Urban Planning/ Land Use Planning
- Capacity building
- Demonstration project
- Identify further data and information needs
- Others

d. Specific Recommendation to Target Groups

- a. National Government (Developed and Developing Countries)
- b. Local Authorities
- c. Private Sector (Industry, Energy, Transportation, Agriculture, Tourism, Finance, etc.) and NGOs
- d. International Organizations (Rio+10, World Bank, Asian Development Bank, UN Bodies)
- e. Academic society (e.g., universities, institutions, research groups)

4.2 Reports on Specific Issues

Possible title and content of the reports are as follow:

- a. Report on the "Current Situation and Problems in Environmental Management in related to Asian Cities"

It will analyze the historical process and the present situation of the urbanization and environmental problems in Asian, centering on the actual problems in case study cities.

- b. Report on "Experience of Japanese Cities in Industrial Transformation"

It will examine the effectiveness of the environmental management systems adopted in Japanese industrial cities, and discuss their applicability to other Asian cities. It will be submitted to the IHDP industrial transformation project.

- c. Report on the "Strategies for Improving Urban Environmental Infrastructures"

It will present strategies for establishing public transportation required for measures against traffic congestion and air pollution, resource recycling and more efficient use of natural energy.

- d. Report on the "Strategies for Improving Environmental Management Capacity in Asian cities"

It will present strategies for improving environmental governance in Asian cities, with respect to the implementation of laws and regulation, finance raising, technology, capacity building, etc.

5. Schedule

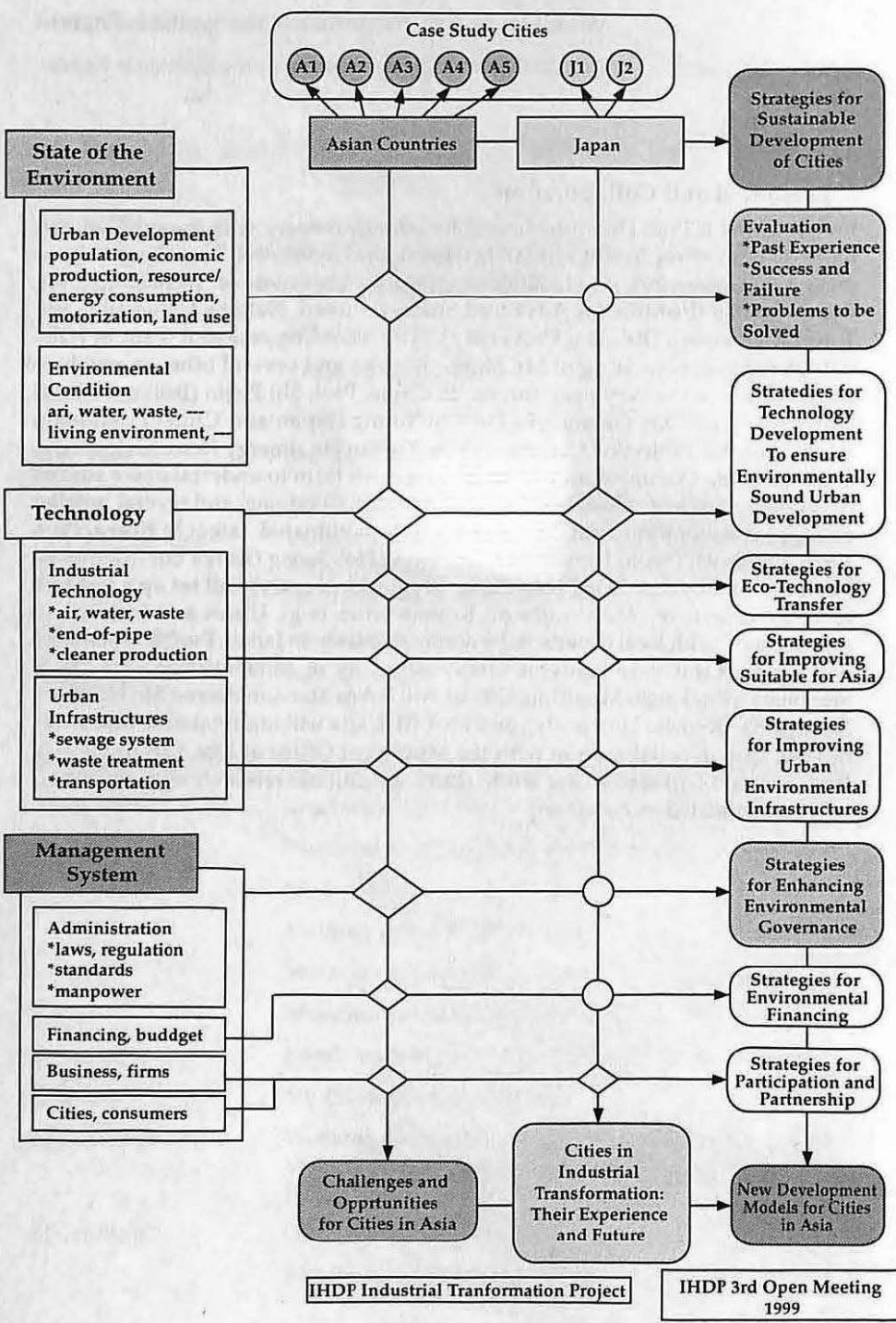
●1st Year (1998/99): Preparation and Initiation of the Project

8-10 February 1998	2nd International Workshop for Strategic Research on Global Environment
February 1998	Preparation of the Guidelines for the study
March 1998	Selection of the First Case Study Cities (about 5-7 Cities / China, Korea, Indonesia and Japan) Organizing the Local Research Groups
April 1998~	Start of the Studies on the First Case Study Cities Preliminary Meetings at Case Study Cities Missions to the Case Study Cities Local Workshops / Local Research Group Meetings
June 23-25 1998	1st Project Group Meeting (Workshop on "Cities in Industrial Transformation," Joint Meeting with the Regional Workshop of IHDP Industrial Transformation Project, in Kitakyusyu City)
July-August 1998	Working Group Meetings of Regular Staff Members, Visiting Researchers, Local Research Group Members (at IGES/Shonan International Village)

- February 1999 2nd Project Group Meeting
 Selection of Additional Case Study Cities
- 2nd Year (1999/2000): Continuation and Evaluation of the Case Studies / Start of Comparative Studies
- April 1999~ Continuation of the Studies on the First Case Study Cities
 Start of the Studies on the Additional Case Study Cities
 Meetings at Case Study Cities
 Missions to the Case Study Cities
 Local Workshops / Local Research Group Meetings
 Policy Review Meetings in the Case Study Cities
- May 1999 3rd IHDP Meeting
 3rd Project Group Meeting
- July-August 1999 Working Group Meetings of Regular Staff Members,
 Visiting Researchers, Local Research Group Members (at
 IGES/Shonan International Village)
- February 1999 4th Project Group Meeting
- March 2000 Interim Report
- 3rd Year (2000/01): Completion of the Project and Dissemination of the Results
- April 1998~ Continuation of the Case Studies
 Preparation of the Policy Review Papers for the Case
 Study Cities
 Drafting of the Synthesis Report
 Meetings at Case Study Cities
 Missions to the Case Study Cities
 Local Workshops / Local Research Group Meetings
- May 2000 5th Project Group Meeting
- July-August 1999 Working Group Meetings of Regular Staff Members,
 Visiting Researchers, Local Research Group Members (at
 IGES/Shonan International Village)
- March 2001 6th Project Group Meeting
 Finalization of Case Study Reports

6. Personnel and Collaboration

Project leader is Prof. Hidefumi Imura, Kyushu University, with the support and participation of Prof. Yoichi Yamashita (Hiroshima University), Prof. Ryuji Hayase (Nagasaki University), Prof Li Zhidong (Nagaoka University of Technology), Mr. Ryutarō Yatsu (Institute for Advanced Studies, United Nations University) and Tohru Matsumoto (Kyushu University). The standing research team in IGES will be formed, consisting of Mr. Shinji Kaneko and several other researchers who will join in the very near future. In China, Prof. Shi Peijin (Beijing Normal University), Dr. Xia Guang and Dr. Ren Young (Japan and China Friendship Environmental Protection Center), and Dr. Xiulian Hu (Energy Research Institute, State Planning Commission) will set up a research team to undertake case studies of Chinese cities (e.g., Shenzhen, Dalian, Shanghai, Congqing, and several smaller cities) in collaboration with local experts to be nominated later. In Korea, Prof. Kim Changsuck (Seoul University), Dr. Jeong Hoi-Seong (Korea Environmental Institute), and Dr. Lee Dong-Kun (Sang Myung University) will set up a research team to undertake case studies of Korean cities (e.g., Ulsan and Inchon), in collaboration with local experts to be nominated later. In Japan, Prof. K. Katsuhara will conduct the case study of Kitakyushu City in collaboration with Dr. S. Shinohara (Kitakyusu Municipal Office), Mr. Tohru Matsumoto and Mr. Hirofumi Nakayama (Kyushu University), and Prof. M. Ukita will undertake the case study of Ube City in collaboration with the Municipal Office of Ube.† In Indonesia, Prof. Soerjani will lead a case study team. Additional research team members will be nominated as necessary.



Forest Conservation

Project Planner: Prof. Hiroji ISOZAKI

1. Background

Forest is important not only for production of timber but also for conservation of biodiversity, water generation or prevention of global warming. However, natural characteristics of forest differ among different places. Even for forest with same natural characteristics, desirable management methods varies place by place, because local people have different perception for forest and different way of use. In addition, some countries place national importance on production and export of timber. Then, it is difficult to conduct scientific and objective discussion of any alternative policies and actions based on common global criteria.

At the Earth Summit, 1992, forest conservation was one of key issues. Although it adopted the Agenda 21 which called for actions to prevent deforestation and the Forest Principles, it failed to conclude a Forest Convention. After the Earth Summit, number of international initiatives have emerged, such as Intergovernmental Panel on Forests (IPF), World Commission of Forests and Sustainable Development (WCFSD) and others, in order to find out possible solutions to halt worldwide deforestation and degradation of forest lands, regarding all types of forests. At the Special Session of the General Assembly of the United Nations to Review and Appraise the Implementation of the Agenda 21, in June 1997, it was agreed that the work should be continued in order to reach international consensus on forest conservation, and the tasks to shape concrete actions in the international community was forwarded to the Intergovernmental Forum on Forests (IFF) which was expected to finalize the direction of international solutions on this critical matters for all human societies.

In the past, most of the debates regarding various aspects of forests tended to focus on the forest sector and direct causes of deforestation and forest degradation and not necessarily on the cross-sectorial aspects or connectivity of forests and the whole societies (underlying causes) which possibly have linkages with them. Non-governmental Organizations (NGOs) took their initiatives to contribute on one of the most pressing agenda - Underlying Causes of Deforestation and Forest Degradation, and started their research project after the UN Special Session. IFF will organize a global workshop on this matter in early 1999, in addition to case studies which would be conducted by some governments and international NGO research team. This research team wish to present its research findings to this intergovernmental processes.

ITTA, revised in 1994, sets out in its basic objectives a goal to be achieved by the year 2000 that international trade in timber should be only from forests managed sustainably and international cooperation to facilitate developing countries to achieve the goal is encouraged. In 1995, criteria and indicators on sustainable management of temperate and boreal forests was adopted. However, these agreements set only general obligations and guidelines, and actual methods for domestic implementation are not specified.

2. Purpose

As explained above, forest conservation is one of key issues for the world, and development of strategy for sustainable forest management is most urgent. But comprehensive study has just started. This research project aims to prepare a strategy for conservation and sustainable management of forest in Asia and the Pacific Region, and to propose necessary supporting legal measures and policies, as well as to propose basic elements to be included in a world forest strategy based on analysis and examination on forest in other region including boreal forests.

To that end, both domestic and international aspects of forest issues should be analyzed. In particular, actual conditions and obstacles in resolution of problems on forest issues should be examined at the local production level and domestic and international trade level, as well as to examine underlying causes of deforestation and forest degradation.

At the local production level, it has been widely recognized that a forest management should be based on local people's participation. This research project will propose a desirable management system for local forest as local commons based on local people, as well as a system for management of forest as national commons based on supervision and participation of the general publics of each countries. Because such management system will be well supported by sustainable utilization of non-timber products of forest, this project will examine status of utilization of non-timber forest products and propose desirable way of their production and utilization.

At the trade level, this project will analyze and examine actual cases of timber and non-timber products trade, and propose necessary control measures to ensure that export of timber occurs only from sustainably managed forest. It will also examine a proposed timber certification system, as well as restrictive measures on consumer level and other necessary measures.

3. Method

In order to avoid any duplication of work in this field, results and information of research activities on forest conservation should be collected as many as possible. For clarification of underlying causes of deforestation and forest degradation, interdependence of local societies through timber trade among different countries will be analyzed from historical perspective, aiming to propose alternative way for social development and civilization for future.

For the participatory management system, theoretical analysis and examination will be carried out from various fields of social sciences. In order to find effective policies and actions, on-site research on such issues as ownership of land and traditional utilization of forest, relevant legal system and administrative institutions, decision making process at local communities, the role of village meeting, and the forester system in Asia and the Pacific Region. Such field research will be also carried out on desirable utilization of forest products and recreational

or touristic use, paying a special attention to equitable sharing of benefit derived from forest. The role of environmental impact assessment procedures and social impact assessment procedures will be also examined based on actual cases.

For the control of trade, current timber trade of both domestic and international will be analyzed and examined from the econometrics and other restrictive measures at consumer level. Timber certification system will be also examined in comparison with existing labeling system.

For the effective implementation of this Project, there should be sub-task groups of four sub-themes: structural analysis, timber trade, participatory management and legal and administrative measures. Firstly, the Sub-Group on Structural Analysis of the Regional Forest Destruction and on the Underlying Causes of Deforestation and the Degradation aims to identify the relations between the region's deforestation or degradation of forest land and the social change (or the impact of the main stream of human activities) which possibly affect those forest areas and its land use. It is also designed to contribute recommendations towards the on going IFF processes, in particular, regarding the discussions on the "Underlying Causes of Deforestation and Degradation of Forests". This group will also clarify what kind of changes would be necessary in the relevant societies, and produce policy recommendations.

Secondly, the Sub-Group on Timber Trade Policy to Support Sustainable Forest Management aims to study the effects of timber trade policy on forest resources and forest management in order to derive desirable timber trade scheme to support sustainable forest management. For that purpose, this group will grasp the timber trade structure, then build econometric model to describe it, evaluate the effects of timber trade policies on social welfare, evaluate the effects of timber trade policies on forest resources, and propose strategic policies for forest-based product trade to support sustainable forest management.

Thirdly, the Sub-Group on Participatory Forest Management aims to present and specify feasible strategy to facilitate participatory forest management system. This group will carry out field research on forest utilization by the forest dwellers in selected local areas, then analyze characteristics of economic, social, and cultural aspects, also examine participatory forest management plan from the view point of local people and propose alternative national forest management policy.

Fourthly, the Sub-Group on Legal and Administrative Supporting Measures for Sustainable Forest Management aims to identify and develop legal and administrative measures, as well as regional criteria and guidelines which ensure, facilitate, assist, support, promote and accelerate sustainable management of forest area in Asia and the Pacific region based on Asia-Pacific perspective and philosophy. Relevant laws and regulations will be examined from the dynamic approach and the viewpoint which attach importance on the result of their actual application in order to identify and develop legal and other measures based on substantive social justice. This group will examine relevant international and domestic laws and regulations on sustainable forest management, also examine general framework and institution of local administrations, analyze environmental

impact assessment procedures from the point of precautionary principle and local participation, and propose supporting measures for law enforcement and administration.

Field studies will be organized at first in Indonesia, Philippines, Thailand, Laos and Vietnam, then it will be organized in other region and country in accordance with the conditions of the project.

In order to ensure successful results, meetings of this project will be organized about four times a year to discuss and review the project. This project will be carried out by its members, but when necessary a research collaborator could be employed to prepare a report on specific theme for a specified period.

4. Schedule

1st Year (Apr. 1998 - Mar. 1999)

Apr. 1998 Meeting of the Project

Main Subjects for the first year: current status and problems of forest; underlying causes of deforestation; ownership of land; traditional utilization of forest; relevant legal systems and administrative institutions; decision making procedures in local communities; the role of village meeting and forester; non-timber products and their utilization; timber trade control.

2nd Year (Apr. 1999 - Mar. 2000)

Main Subjects for the second year: desirable forest management system; necessary legal supporting methods; desirable involvement and participation system for people; relevant laws and regulations; environmental impact assessment system; social impact assessment system; slash and burn system management.

3rd Year (Apr. 2000 - Mar. 2001)

Main Subjects for the third year: development of strategy for sustainable forest management; development of necessary legal supporting measures; development of world forest strategy.

5. Expected Results

Through this research project, causes of problems and obstacles of their solution related to forest management will be revealed and desirable solution could be proposed. Strategy for sustainable forest management for Asia and the Pacific region and necessary legal supporting measures will be proposed. Basic principles which should be included in the possible Forest Convention will be also developed.

Such results will be informed and circulated to international fora including ECO ASIA, IFF and NGO meetings in order to put the results into actual

implementation as well as to contribute to facilitate international agreement on forest conservation and sustainable management.

International Cooperation on Environmental Education

Project Planner: Prof. Osamu ABE

1. Background

Environmental Education is one of the most effective strategies for increasing the general level of public environmental awareness and developing skills for solving environmental problems and maintaining and improving the quality of life and the environment. Many countries and environmental NGOs have developed active programs of environmental education to achieve these goals. However, some countries still feel the need to focus more on national economic development than on social and ecological sustainability and, unfortunately, environmental NGOs and other progressive organizations within these countries are often not strong enough to support environmental education. Nevertheless, this situation is changing and, in recent years, many governments, NGOs and corporations have been increasingly concerned to collaborate in developing a wide range of educational activities which encourage environmental protection and promote sustainable development through a broadened approach to environmental education known as education for sustainability.

International bodies and programs, such as UNESCO and the U.S.-Japan Common Agenda and Environmental Congress for Asia and the Pacific (known as "Eco-Asia") have also been active in supporting environmental education. However, despite these initiatives, several issues still need to be addressed.

These include: identifying problems and current conditions of environmental education in these regions, developing strategies for effective curriculum and professional development, developing appropriate media and technologies for environmental education, and designing and supporting networks. Thus, the primary focus of this project is to enhance awareness and concern for issues of environmental quality through a program of capacity building in environmental education action research and community development for the enhancement of the quality of life and environments in the Asia-Pacific region.

2. Aims and Objectives

The major aim of this program of research is to develop strategies to improve the quality of environmental education, and assist in their implementation in many countries of the Asia-Pacific region. To achieve this aim, the research program has the following objectives:

- 1) To develop and propose proven means of encouraging all countries in the region to develop appropriate environmental education programs.
- 2) To design and support networks which provide generic assistance to countries and NGOs in the regions to encourage and improve environmental education.
- 3) To establish collaborative projects with other countries in the region to

promote the implementation of environmental education.

The result of these activities will be the establishment and enhancement of approaches to environmental education which promote the growth of environmental literacy and citizenship, respect the variety of cultural backgrounds in the region and, thus, contribute to an Asia-Pacific perspective in environmental education.

3. Approach and Method

This research project builds upon contributions to the development of environmental education by international bodies such as UNESCO, and governmental and non-governmental organizations in European, American and Asia-Pacific countries.

3.1 Preliminary Review

The success of environmental education is an interaction of various factors and depends on commitment from various levels and functions of society, such as children, teenagers, adults, urban and rural people, administrative organs, politicians, entrepreneurs, journalists, NGOs, and so on. Thus, the strategic approach in this research program will be developed upon a preliminary review of the status of environmental education activities initiated by governments, educational institutions, NGOs, INGOs, corporations and the media in all parts of the world with a view to identifying suitable themes and strategies for enhancing the quality of environmental education in the Asia-Pacific region. This review will also identify the possibilities in the region for re-orienting education in all sectors towards education for sustainability to take account of the importance of the relationship between environmental education and other issues such as development, population, human rights, poverty alleviation, gender equality, and peace.

3.2 Thematic Research Projects

Environmental education addresses a wide range of audiences including, school children, young people, adults, local communities, bureaucrats, politicians, entrepreneurs, journalists and NGOs. Thus environmental education addresses inter-sectoral partnerships in life-long processes of life-long learning. A most important feature of this is an emphasis upon learning by doing.

Thus, this research focuses upon four key sectors: the media, business and industry, teacher education and NGOs. Thus, the research will be conducted by four research teams, one for each sector, but who will work collaboratively to ensure inter-sectoral linkages.

These thematic research projects will follow a similar research strategy in a selected range of countries, and involve five common research phases:

Phase 1: Case studies will be prepared of sample environmental education activities from a range of selected countries in the Asia-Pacific region. Research for the case studies will be based upon secondary data, observations, individual and group interviews and community meetings.

* Phase 2: The case studies will be analyzed in order to identify key issues such as the range of strategies used, the influence of context and other factors which influence the relative degrees of success of the environmental education activities, the obstacles faced and how these are overcome. This analysis will be used to develop principles and guidelines for 'best practice' in environmental education in each of the four sectors.

Phase 3: These principles and guidelines will be used to develop draft strategies which may be used to adapt for use across the Asia-Pacific region. The target of organizations which are used the strategy is focused to governments and international organizations, but it might be better to make a strategic plan for the people who concern companies, NGO and so on.

Phase 4: Seminars and workshops with regional specialists and others involved in environmental education will be organized to review and revise the draft strategies. These meetings will also be used to developed prioritize future research needs and activities for IGES.

Phase 5: The strategies will be published and disseminated to concerned agencies responsible for environmental education in the four sectors.

4. Schedule

This research project is basically planned for a three-year period during which time we will complete and present our significant results. However, a longer-term project is desirable since IGES has selected environmental education as one of its major projects. Because this project is intended to be integrated with other research projects at IGES, we will communicate and coordinate with other research projects at all times.

1st year

* Preliminary review of environmental education in Asia-Pacific region, including activities of the UN, and governments, higher education institutions, the media, corporations and NGOs in other countries.

* Conduct research training seminar for members of the four research teams from Japan and other countries.

* Commence Phase 1 of the four thematic research projects.

2nd year

* Complete Phase 1, 2 and 3 in the implementation of each thematic research project.

* Conduct seminars with experts on environmental education from foreign countries, including Europe and the U.S., to review the progress of the research.

3rd year

* Completion of Phases 4 and 5 of each thematic research project.

5. Expected Outcomes

Each of the thematic research projects will propose strategies to enhance the implementation and quality of environmental education in the Asia-Pacific region based upon the development of principles and guidelines. The results of this project will be used to prepare proposals to UN, governments, NGOs and others for the promotion of environmental education in the Asia-Pacific region. The project will also contribute to the effective operation of international partnership in the environmental education area. IGES should also consider coordinating and conducting further research in the region. Promoting this project will surely build a practical network in environmental education area in the region in one way or another.

Workshops and seminars will be conducted at strategic points in the project.

Publications will include:

* Working papers on the review of the status of environmental education in the region, and each thematic research project.

* A document which synthesizes the research and provides suggestions for regional and national strategies to promote environmental education.

6. Research Management

Individual thematic research projects will be governed by a Team Leader under the guidance of the Project Leader. This will ensure that individual projects are conducted within a structured framework and integrated into the overall research program. Thus, members of the thematic research projects will be encouraged to work on overlapping themes.

1. Introduction

Environmental governance is about how societies deal with environmental problems. It is concerned with the interactions among formal and informal institutions and the actors within society. These interactions influence how environmental problems are identified and addressed.

Environmental governance structures in Asia are rapidly changing. At the domestic level, new environmental laws, programmes and institutions are being established. At the sub-regional and regional levels also, environmental networks and cooperation schemes are beginning to form. These rapidly changing governance structures are influencing greatly how environmental problems are addressed in the region. It is thus critical to examine the nature of environmental governance in the region.

2. Background

During the initial stages of development of national environmental policy, technically-oriented policies and measures played a major role in resolving the immediate problems of rampant industrial pollution. As a result, research activities carried out to date have tended to be based primarily on natural sciences and technical approaches. However, "technical fixes" will not suffice in solving today's global environmental issues. One of the reasons for this is that they ignore the diversity of interests and perspectives among actors in establishing and implementing policies for environmental protection.

The problems of the human environment are not just national problems. They were placed on the international agenda in 1972 at the United Nations Conference on Human Environment, the first among a host of global issues to be addressed by the world body. The Stockholm Conference gave impetus to the growth of international environmental law and international organizations specifically devoted to promoting environmental governance worldwide, but failed to bridge the gap between North and South over conflicting views and approaches to issues of environment and development.

Twenty years later, Agenda 21, a global plan of action directed toward the 21st century, was adopted at the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro. Although the international community agreed at UNCED to strive for the attainment of the ultimate goal of sustainable development, the state of the global environment is ever worsening today and is expected to continue to deteriorate, potentially leading to a catastrophic situation in the not-too-distant future. The emergence of global environmental issues since the 1980s exerts an added pressure on the already strained resources and structures for environmental governance in developed and developing countries, and thus makes it imperative for us to reconsider existing

social orders, value systems and to restructure our economy, reducing the impact of human activities on the environment.

Environmental problem solving in the Asian region is made complex by differences in economic, political and cultural conditions. A challenge for the region is to develop governance mechanisms that can address both regional and global environmental problems. As a result of decades of rapid economic growth, environmental problems have grown in importance in Asia. Economic activities in this region are having enormous impacts on the state of the environment. Yet, there is little history of environmental cooperation in the Asian region.

3. Purpose

The main purpose of this research project is to address and analyze major issues of environmental governance and propose concrete policy recommendations relevant to the Asian region. The Environmental Governance (EG) project of IGES will utilize a systematic approach to documenting information and carrying out its activities, and maintain strong links with the other IGES research areas. Through its research, the EG project will be expected to assist countries in the region in capacity building and promote a participatory approach to environment and development.

4. Basic Approach and Activities

The EG project will maintain its own activities and be involved with other project areas activities to yield useful results that will be able to support informed policy making in sub-regions of Asia within a three year period.

Within this approach, the following questions may be raised:

- * How do environmental governance structures impact on environmental outcomes?
- * In the context of globalization and systems change, how can environmental governance make a difference to environmental outcomes in Asia?
- * What environmental governance structures exist in Asia?
- * How and why are these structures changing?
- * Are these environmental governance structures adequate to deal with existing problems and those likely to emerge?
- * If not, how can they be improved?
- * What are the responses within the region to global environmental processes?
- * What can Asian countries learn from each other?
- * What policy recommendations can be made?

These issues need to be considered in light of practical environmental

outcomes, and ways to promote environmental governance.

4.1 Processes and Actors

A "Processes and Actors" approach will be the initial thrust of the project. The project will examine in a systematic way what the relevant processes are and who the actors are that work to promote and support effective environmental governance in the Asian region, as well as how these have changed over time. This work will build on other global studies in the field and examine ways in which these may or may not apply to the region, with a view to supporting future practical outputs.

The purpose of studying actors and processes is because they work to channel/mitigate how other forces (science, international pressures and processes, etc.) influence policy and environmental outcomes. In doing so, the project will work to highlight the importance of globalization on the region and sub-regions in terms of policy making and implementation processes. It will also work to highlight the changing face of environmental governance in Asian countries and sub-regions.

In terms of definition, 'actors' comprise the stakeholders relevant to environmental governance, including policy makers, government officials, elected officials, civil society, industry, scientists, media, municipal authorities, justice systems, private entities, and international organizations. 'Process' refers to the decision-making machinery, institutions and instruments, both formal (e.g., laws and regulations) and informal (e.g., administrative guidance), and the outcome that is influenced by the relationship between these and the actors. 'Process' is also concerned with the issues related to agenda setting, implementation and compliance.

4.2 National and Sub-Regional Governance Systems

Selected national and sub-regional environmental governance systems will be examined in a cross-sectoral and comparative manner.

Questions to be examined with regard to national and sub-regional governance systems include: How are decisions made? Who makes them? How are decisions implemented? Based on what information, provided from where? How are processes reviewed? How are these influenced by internal and external forces? How have the systems evolved? Are they adaptable in responding to challenges?

Focus on Other Project Areas

With this research serving as a base, the EG project will then perform the important function of working with the other research project areas of IGES. The EG project will focus on and work with (1) climate change, (2) forest conservation and (3) urbanization and environment projects to provide specific issue-focused

review and recommendations.

The country and sub-regional studies of the EG project will specifically consider the related issues in these three project areas so as to provide concrete recommendations/suggestions to relevant actors in the region to promote effective environmental governance and outcomes. Consideration will need to be given to economic instruments and financial mechanisms, and the impacts of these, as well as the impacts of privatization and globalization on environmental governance.

4.3 Working Paper Series

The EG project will produce a series of Working Papers. These will focus on national and sub-regional perspectives. The topics covered in each will be: (1) actors and processes; (2) implications for environmental outcome; (3) implication for sub-regional cooperation; and (4) policy recommendations.

Additional papers will be written in relation to and in cooperation with the other project areas as an area that effectively provides both governance inputs to those projects, as well as bridging the subject areas. The objective will be to support and generate effective overall results for IGES.

4.4 Links with Other Project Areas

Specific ways in which the EG project may work with other project areas of IGES are as follows:

(1) Climate Change

Project interaction will focus on governance issues, possibly in Northeast Asia and South Asia. Issues to be considered could include implications for possible regional agreements, international cooperation, and use of market-based mechanisms as a means of implementing international and national environmental laws and policies.

(2) Forest Conservation

Studies focusing on Southeast Asia will provide a more holistic view of forest management over and above conventional approaches, including the governance aspects of deforestation.

(3) Urbanization and Environment in Asia

The interaction between the EG project and the urbanization and environment project will focus on examining cities as microcosms of environmental problems and solutions. In doing so, it may also select one or two issues, such as water and air, and examine how the governance systems impact on these at the sub-regional level.

(4) International Cooperation on Environmental Education

The EG project will collaborate in the development of training materials for promoting the implementation/compliance of international/regional environmental accords. The objective will be to build institutional capacity within the country and target implementors and the public to understand laws, rights, science, etc., to become active participants in the governance process.

4.5 Geographical Areas

In undertaking this research, IGES will work with networks in selected countries to develop both national and sub-regional perspectives. The countries initially selected for study are: Japan, China, India, and Thailand. The project will then examine the same types of questions at the sub-regional level. The sub-regions selected are Northeast Asia, Southeast Asia and South Asia.

4.6 Developing Future Scenarios

The EG project will develop a number of scenarios affecting the region. These scenarios will be based on a 'what if?' approach to examining issues such as the impacts of globalization and democratization on the region, as well as of unexpected crises such as natural disasters and collapse of financial markets. The purpose will be to assist the countries and sub-regions to better adapt to change and promote a positive environmental outcome in the region.

5. Work Schedule

Year One:

1. In the first 3 months, time will be utilized to establish necessary networks to assist in implementing the research.
2. In these first 3 months, the EG project will also undertake a survey paper of research initiatives and products within Asian and elsewhere. These will provide a basis for future work.
3. The EG project will utilize and develop networks to prepare four country papers applying a systematic research framework. In the first 9 months of operation, the first draft of the country papers would be expected.
4. In undertaking the country papers, a sub-regional study of the processes and actors may be initiated.
5. A workshop will be held to maintain the focus of the project as well as to better involve the policy makers who are most related to the areas in question.

Year Two:

1. A series of follow-up working papers to the four country papers will be prepared, which will specifically target the three IGES issue areas - climate change,

forest conservation, and urbanization and environment - with a view to coming up with specific recommendations.

2. Sub-regional studies will be undertaken, both generally and in relation to the three issue areas.

3. A workshop will be organized to maintain focus of the project and involve key persons, particularly policy makers.

Year Three:

1. The project will develop a scenarios approach for the countries and sub-regions.

2. Publications under the project will be finalized. The publication will be based on a synthesis of the research findings of IGES.

3. Recommendations for the region will be developed focusing on the issue areas.

4. An international conference of policy makers will be organized to disseminate the research results and plan for future activities.

6. Expected Outcomes

Expected outcomes of the EG project are as follows:

1. A survey paper of environmental governance research in Asia and elsewhere

2. Establishing and maintaining networks for project and result implementation

3. Country studies

4. Sub-regional studies

5. Workshops

6. An international conference of policy makers

7. Publications

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