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STUDY ON CAPACITY BUILDING OF ENVIRONMENTAL MANAGEMENT IN ASIAN CITIES

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Abstract

The objective of this study is to provide necessary information for international society, which is seeking for better approaches such as "implementation and outcome" in place of "discussion and planning", to realize "sustainable development and environmental achievement". This study is focusing on "local society", which are carrying out concrete actions, as a basic framework of urban environmental improvement. Effective integration of the multi-stakeholders, such as local governments, citizens, NGOs, private enterprises, and universities, is a funadamental analysis framework. In this study, it was concluded that 2 types of approaches such as "Government Approach with Dialogue" and "Partnership Approach with Consensus" were effective for urban environmental improvement. Each approach is based on cities' characteristics. This also makes it clear what local initiative is.

KEYWORDS: *environmental management, partnership, community, local government, East Asia, multi-stakeholder*

1. Introduction

According to United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), the state of the urban environment in Asia is getting worse in spite of many countermeasures. Furthermore, it is estimated that burden to the environment, such as population and energy consumption, will see further increase in urban areas. Asian countries face multiple environmental problems such as basic human needs, industrial pollution, urban environmental problem, and natural degradation all at same time due to rapid industrialization and urbanization. These environmental deteriorations and increasing poverty will be the most important issues in the 21st Century.

However, there was significant progress on the earth during this decade since the "Earth Summit" in Rio de Janeiro in 1992. As seen in the discussion at the "World Summit on Sustainable Development (Johannesburg Summit)", the international society has a consensus on realizing "sustainable development and environmental achievement", which is the most important basis of human life. Based on this consensus, the next steps including concrete actions are required.

As shown in the results of some previous international assistances, the fundamental solutions of

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environmental problems should rely on not outside players but own human resources. Therefore, the autonomic capacities for solving problems are necessary and the analysis on its approach is required. The study on urban environmental problems and its solutions were focusing on national level and the capital cities and also governments' capabilities only. The grass-root approaches were also dealing with specific sectors including NGOs as an alternative organization individually. But any stakeholders should be systematically involved in environmental management. The importance of "equal partnership between government and multi-stakeholder" and "local society with citizen participation" was pointed out at the Johannesburg Summit. Although importance of effective actions of NGOs and strengthening the capabilities of local governments have been pointed out by many discussions, it would be predicted that conflictive vectors/approaches among stakeholders can not be effective or will bear new issues. According to actual situations, issues of capacity building of local environmental management should be addressed by not only "governmental approach" but integrated approach based on multi-stakeholders' partnership in local community in order to effectively utilize local resources for enforcement of management.

The objectives of this study are:

To analyze the process of local capacity building, the stakeholders' contributions to the local capacity building, and the potential resources;

To identify the required factors for realization based on assumption that integrated conditions can only progress environmental improvement; and

To suggest necessary balanced approaches in order to strengthen the capability of environmental managements in each city.

2. Characteristics of Stakeholders in Urban Environmental Management

Actually, many East Asian countries are promoting decentralizations however it is pointed out that the capacities of local governments are not sufficient. In particular, local cities, as opposite to capital cities, are predicted to grow and become one of big issues while there are less supports from national governments. Despite the importance of this, studies concerning these issues are not available and the realities are not clearly known.

Four cities are targeted in this study, each of which have examplary characteristics such as being

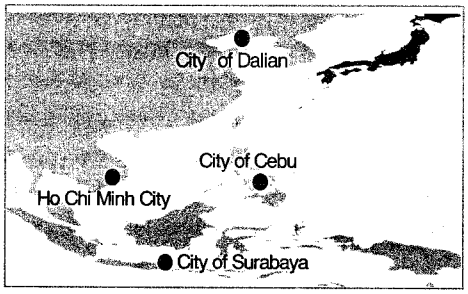

Figure 1. Locations of four cities.

leading local cities, enthusiastic willingness for environmental improvement, and close connection to the "Implementation Plan", which is the United Nation's funadamental framework for global environmental protection and adopted at the Johannesburg Summit, through the "Kitakyushu Initiative for a Clean Envitonment". The Kitakyushu Initiative was endorsed at the 4th ESCAP Ministerial Conference as the implementation mechanism of local initiatives. The cities are Dalian (China, population: 5.34 million with 1.2 million in urban area), Cebu (the Philippines, 0.66 million), Ho Chi Minh City (Vietnam, 4.9 million), and Surabaya (Indonesia, 2.47 million). These cities are participating in the Kitakyushu Initiative Network by recommendation of each national government.

2.1 Characteristics of environmental problems

The City of Dalian has developed as an industrial city with international port. The City of Cebu is the center of Metro Cebu, which consists of 3 cities and 7 towns and has 1.2 million populations. Metro Cebu is second largest economic region next to Metro Manila. The Ho Chi Minh City has active economic activities and the City of Surabaya is a capital of the East Jawa Province. The environmental conditions in each city are indicated in Figure 2 to Figure 4. However, these environmental monitorings are not necessarily carried out by local governments as described latter.

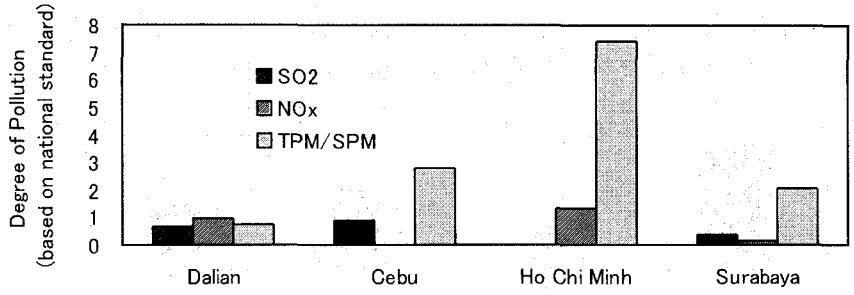

Figure 2. Air pollution in 4 cities (Environmental standard = 1).
NOx in the City of Cebu and SO_2 in the Ho Chi Minh City are not available.
Values indicate in central area or average except Ho Chi Minh City (along bus route).

Figure 2 shows air pollution in 4 cities and the vertical axis indicates pollution degree in compare with the standards in each city. Air quality in the City of Dalian passes the environmental standard. The reason is based on some countermeasures including strong control of factories, changing individual coal burning boilers to centralized heating systems, and promoting gas energy utilization. Ambient air condition in central area in the City of Cebu is about 3 times of Total Suspended Particulates (TSP) as standard ($90\,\mu g/m^3$), however, SO_2 passes the standard. It is supposed that air pollution in Cebu comes from traffic. The Ho Chi Minh City has about 8 times, in maximum, of suspended particle matters as standard ($0.3mg/m^3$). The NOx in maximum in the Hi Chi Minh City is over the standard ($0.4\ mg/m^3$) and is increasing. Although SO_2 and NOx in Surabaya are below the environmental standards, Suspended Particle Matter (SPM) is twice as the standard ($0.26mg/m^3$).

Air pollution in the Ho Chi Minh City and the City of Surabaya are supposed to be caused by flying up of dust on radside due to traffic. This is similar to Cebu's case. Even in Dalian, increasing traffic will be a potential air pollution in the future. In general, air pollutions of suspanded

particlulates by traffic are common issue and SO_2 and NOx are still potentiality at moment.

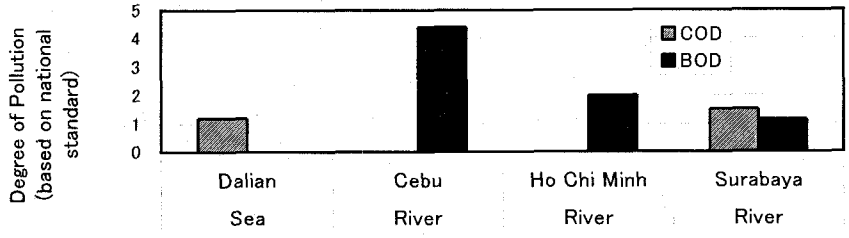

Figure 3. Water pollution in 4 cities (Environmental standard = 1).
Water quality of River in the City of Dalian is not available.

Regarding water pollution, the Guadarupe river in the City of Cebu is heavily polluted such as 66mg/l of BOD in comparison of standard (15mg/l). The Butuanon, which is located in the City of Cebu and the City of Mandaue, experienced 430 mg/l of BOD (stanadard: 15mg/l). It is pointed out that the Guadarupe river is polluted by domestic wastewater and solid waste and the Butuannon river was polluted by industrial wastewater. In the Ho Chi Minh City, river water quality is over the standard for water supply intake. The oil is 0.11mg/l in maximum (standard: 0mg/l) and the BOD is 11mg/l in maximum (standard: 4mg/l). It is reported that the river in the City of Surabaya is polluted by domestic wastewater and industrial wastewater (standard: 6mg/l).

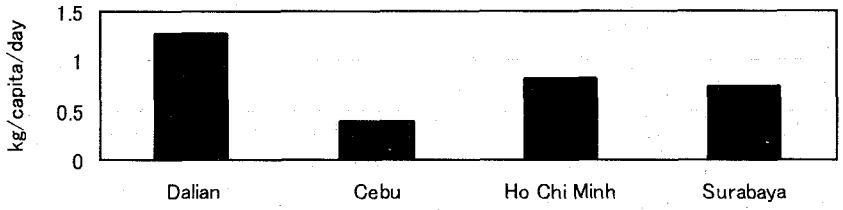

Figure 4. Generation amount of solid waste in 4 cities.

The amounts of solid waste generations are different from city to city such as 0.4 kg/capita/day in the City of Cebu and 1.28 kg/capita/day in the City of Dalian. The average of Japanese major cities is 1.4 kg/capita/day. The Dalian's is closing to Japanese average. In the City of Cebu, increasing speed of solid waste generation amount, which is 185 thousand m3/year in 1989 to 390 thousand m3/year in 1994, is much more higher than population growth (8% for 5 years) in the City of Cebu. Much solid waste causes insufficient collection service, illegal dumping into rivers, open burning, which causes environmental degradation. In Surabaya, final disposal site was shut down by objection of residents due to environmental pollution and the city government had to transport its collected solid waste to another site, which was very far from previous one. It caused lower collection efficiency. Increasing solid waste in Dalian and Cebu are potential environmental issues.

The characteristics of urban environmental problems in cities are summarized as follows:

- Dalian is in the stage of environmental problems due to urbanization and changing lifestyles after some improvements of industrializations';
- Ho Chi Minh City's environmetal problems comes from urbanization, and industrial pollution is

still potentiality;

- Cebu's and Surabaya's, in addition to Ho Chi Minh City's, include basic human needs such as solid waste collection or many problems at same time.

2.2 Stakeholders and the actions in urban environmental management

Stakeholders' roles and activities are listed in Table 1.

The City of Dalian is charge of most environmental managements and has environmental management plans. Citizens are involved in social management through the "Resident Committee," the "Women's Association," and the "Youth Association," etc. Citizen play its role in solid waste management such as transporting their waste to public collection containners. Private enterprises, as polluters, took actions against industrial pollution and improved them. The university has joint development activities with enterprises. Environmental management is decentralized into local government in China.

Table 1 Stakeholders' roles and activties for urban environmental management in 4 cities.

City of Dalian		
	Local Government	Role: Local government is in charge of most environmental management. Activity: Organization: Environmental Protection Bureau, etc. Master Plan: Dalian City Environmental Management Modernization Plan, etc. Environmental monitoring: Air Monitoring System, etc. Mayor: Election by the People's Representative Committee
	Citizen, Community, NGO	Role: Citizens transport their solid waste to collection containers. Claim on environmental management is sent to local government. Activity: Solid waste management at community level is operated by Resident Committee. Some educational programs are done by Women's Association.
	Private Entrprise	Role: Improvement of industrial pollution Activity: Environmental information exchange is coordinated by the Dalian Environmental Protection Industries Association, etc.
	University	Role: Development of environmental technologies Activity: Many environmental technologies are provided by the Dalian University of Science and Technology.
City of Cebu		
	Local Government	Role: Local government (Department of Public Services) is in charge of solid waste management. National government (DENR) is in charge of most environmental management. According to the "Local Government Code of 1991", the authorities and resources regarding environmental management would be transferred to the local governments. Activity: DENR's monitoring (water, air) with insufficient capability. Environmental policy based on Manila Decision is applied. Mayor of Cebu city is elected by citizen vote. Regional directors of DENR is appointed by national government.
	Citizen, Community, NGO	Role: Information dissemination, concrete activities, etc. The organizations are; Barangay (Community), PCAPI (association of pollution control officers) Multi-stakeholders Groups: Ramon Aboitiz Foundation, Environmental Quality Council (EQC), CLEAR, etc. Activity: Campaign, Seminar, River Clean-up, (issue of continuity)
	Private Entrprise	Role: Main actors for improvement of industrial pollution Public services are not privatized yet. Activity: Technical meeting, environmental agreement between the Butuanon River Industrial Committee (BRIC), environmental campaign, introduction of Cleaner Production, etc.
	University Research Institute	Role: Research and analysis, designing wastewater treatment plant, etc. Activity: Providing expertise. For instance, the San Carlos University supported private factory to install wastewater treatment plant as well as providing waster analysis services as business.

Table 1. Stakeholders' roles and activties for urban environmental management in 4 cities *(continued)*

Ho Chi Minh City		
	Local Government	Role: Local government is in charge of most environmental management Activity: Under the People's Council of Ho Chi Minh City, People's Committee of Ho Chi Min City, including Department of Science, Technology, and Environment (DOSTE) and Department of Transportation and Public Works (DTPW), is in charge of environmental management. City covers small and medium scale companies and national government covers national companies
	Citizen, Community, NGO	Role: Citizens hire collectors for their solid waste (house to collection station). Activity: Some activities such as solid waste recycling and environmental education were initiated by women's group and youth group.
	Private Entrprise	Role: Improvement of industrial pollution Activity: Introduction of Cleaner Production in some projects such as UNIDO's, Kitakyushu City's. Both environmental and economic improvements were achieved.
	University Research Institute	Role: Research and analysis Activity: Coordination of the project, dispatching environmental education expert to local government
City of Surabaya		
	Local Government	Role: Local government is in charge of environmental management excepting control of big companies. Activity: Environmental Department is monitoring air, water, noise, etc. Air monitoring is carried out by telemeter system. Cleanliness Department manages solid waste. No environmental improvement plan is essential issue. Mayor is appointed by the national minister based on the recommendation of city assembly. However, decentralization is being promoting in Indonesia.
	Citizen, Community, NGO	Role: Citizen is involved in decision-making process of community improvement policies. Residents hire the collectors for their solid waste (house to transfer station). Activity: Kampung is common community in Surabaya. Kampung foundations disseminate information, arrange activities, etc. The Kampung Improvement Programme (KIP) is a success story with community participation.
	Private Entrprise	Role: Improving industrial pollution and providing environmental services Activity: Some of industrial activities are implementing in industrial estate with common wastewater treatment facility. 30 % of solid waste collection is covered by private enterprises based on contract with the local government.
	University Research Institute	Role: Research and giving guidance Activity: The Surabaya Institute of Technology (ITS) was coordinator for KIP. Community and the local government could have close dialogue and cooperation. Some universities are carrying the pilot projects on composting of kitchen waste.

In the Phillipines, although the "Local Government Code of 1991" gave environmental authorities to the local governments, most environmental management is still done by national government at present. The City of Cebu is just in charge of domestic waste management. The Barangay, which means commnity and has a captain elected by residents, has some adnimistrative authorities but do not play a role in environmental management. There are many NGOs' activities such as watershed management, tree planting, environmental education by the Ramon Aboitiz Foundation, citizen-participation river clean-up by the CLEAR, etc. The members of these NGOs come from ordinary citizen, private enterprises, governments, research institutes, etc. This means that some part of environmental management are done by citizen participation through NGOs' activities. In addition, it is the characteristic in Cebu that specific projects are supported by the council/partnership, which consists of citizen, national and local governments, private enterprises, and unversities.

For instance, the "Environmental Quality Council" for taking countermeasures against pollution by electroplating industiry and an "Agreement" between the "Butuanon River Industrial Committee (BRIC)" and DENR were realized. Pollution Control Officers (PCO) have the responsibility for environmental management in private factories. PCO also organized the "Pollution Control Association of the Philippines, Incorporated (PCAPI)" to exchange related information, provide

training programme, promote environmental education for citizen. The San Carlos University accepts many water samples to be analyzed with a certain amount of charge from private factories and designed wastewater treatment plant of a factory.

Environmental management in the Ho Chi Minh City is concentrated into the local government as same as the City of Dalian. Administrative organizations such as the Department of Science, Technology, and Environment (DOSTE) and its district experts have already been arranged. Although residents are participating in environmental management by hiring collectors of solid waste in the communities, other significant activites are not identified. Although many factories are sometimes polluters, some model factories has introduced "Cleaner Production (CP)", which can achieve both economic development and environmental improvement, in cooperation with foreign assistances. Regarding CP introduction, university participated in the project team organizaed by United Nations Industrial Development Organisation (UNIDO) to provide technical assistance. A university is also dispatching staffs to local government in order to promote environmental education progamme.

In Indonesia, decentralization is being promoted. The City of Surabaya strengthened the environmental organization and environmental monitoring system. Citizens in Kampung (traditional community) maintain the solid waste collection system within Kampung such hiring scavengers as "Yellow Force" (collector). Local government is collecting solid waste accumulated in containers at DEPO/LANDASAN (community collection station). Although private enterprise, which is one of polluters, are not identified as players with concrete actions in community, some cooperative factories moved to a industrial estate with wastewater treatment facilities. The industrial estate is invested by national, provincial, and city governments. The privatization of public services is done by contracting 30 % of solid waste collection services to private company. The characteristic of Surabaya is the involvement of the university. Particularly, the Surabaya Institute of Technology (ITS) played a key role to make close relationship between citizen and local government for promoting citizen participation in the Kampung Improvement Programme (KIP). At moment, ITS and some universities are conducting model projects for solid waste recycling in collaboration with local residents.

In comparative analysis on urban environmental management institution, the City of Dalian and the Ho Chi Minh city strengthened their own capacities such as organizations and authorities under the local government leaders, however, movements of citizen and NGOs are not active. In case of Cebu City, it is under the decentalization and there is not enough capacity of environmental management. Although NGOs are active in place of governemnts, partnerships among local stakeholders are limited in the particular projects and terms. With response to decentralization, the City of Surabaya just established the Environmental Department and the issue is human development for fulll utilizing new scheme. Citizens and universities owe indispensable roles and the patnership between them is expanding from living environment to solid waste management.

3. Integration of multi-stakeholders in urban environmental management

3.1 Conditions for Integration

In previous chapter, involvement of local stakeholders was discussed. As it is found out in the discussion, each stakeholders necessarily do not have good partnerships or form the integrated approaches to local environmental issues. Therefore, the necessary conditions for it are discussed.

The capacities of environmental managements are summarized in Table 2.

The City of Dalian has a pollution control plan. The others lack the environmental management plan or common visions and it means that integrated appoaches is not achieved even if some stakeholders are active. The large propotion of local government in environmental management should be taken into account for integrating the stakeholders in the City of Dalian. The responses to this issue are listed in Table 3. These actions are enough to improve present environmental problems, mainly industrial pollution. But, broarder participations of citizens and communities are necesssary for potential issues such as solid waste and traffic as shown in Japan.

Table 2. Local capacities and issues of environmental management.

City	Authority	Organization	Monitoring	Planning
City of Dalian	Enough	Local Government covers most matters. Potential is Resident Committee.	Enough	Industrial pollution control plan exists. Public involvement is necessary.
City of Cebu	Arrangement between Local governments and national government	Coordination among multi-stakeholders to strengthen local capacity	A few frequency & limited items	Common vision and plan with citizen involvement are necessary.
Ho Chi Minh City	Enough	Arrangement among departments are necessary.	Enough	Environmental management plan with citizen involvement is necessary.
City of Surabaya	Enough excepting Financing	Capacities of Departments and Partnership among multi-stakeholders	Enough	Common vision and plan with citizen involvement are necessary.

Note: "Enough" means the situations in each city are almost same levele as cities in Japan.

Table 3. Changes in environmental management organization of the City of Dalian.

Year	Establishment of Organization
1973	Environmental Protection Office and Ocean Pollution Control Office (Starting Actions)
1975	Environmental Protection Center
1978	Institute of Environmental Sciences
1979	Environmental Protection Bureau
1980	Pollution Tax Office
1984	Environmental Protection Center / Environmental Monitoring Center
1986	Environmental Protection Committee (Chair: Mayor of Dalian)
1989	Environmental Education Center
1993	Environmental Information Center & Environmental Protection Association

In the City of Cebu, various players are doing many activites. Therefore, the direction of integration should be on the efficient summation of respective players' vectors/directions. Such approach makes total effect higher and provides more environmental benefits to each player. In spite of insufficient decentralization and weak continuity of the project, present environmental management is the basis for more effective one and strengthening the capacity should focus on implementation and coordination issues. The integration should be based on common recognition and basis.

The Ho Chi Minh City has an environmental organization (Department of Science, Technology and Environment) while the local environmental management plan with involvement of the other players is lacked. Regarding the organization of local government, insufficient coordination among departments makes duplication of projects, which are less efficient. Duplication issue is also pointed out in international assistances by the fact that international organizations have established "Assistance Arrangement Meeting." The capacity of coordination among players from inside through outside of local government will be very important for integration.

In the City of Surabaya, there are not wide/deep ditch among citizen, local government, university, and private enterprise. As it is under decentralization, the Environmental Department was established and the function was strengthened in 2001 (Table 4). However, the City of Surabaya has severe financial issue in addition to some issues such as confliction between citizen and the local government regarding solid waste disposal site and administrative capacity. The City of Surabaya reported that small portion of decided budget was enforced and planed projects are not necessarily implemented (Cleanliness Department of Surabaya, 2000). As one of the reasons of this issue, it is pointed out that economic condition was getting worse due to the currency crisis in 1997. Currency crisis affected not only national economy but also local economies. GNP per capita in Indonesia in 1998 decreased 50 % in comparison with the previous year. With consideration of these circumstances, it would require that the integration of multi-stakeholders saves local resources and enhance the capability by efficiently sharing responsibilities and roles.

Table 4 Changing Environmental Management in the City of Surabaya.

Environmental Department (Present)	Environmental Division (Previous)
Jurisdiction ·Implementation of Environmental Project ·Coordination of any environmental activities	Jurisdiction ·Collection and preparation of information
Function: ·Project Planning, monitoring, implementation, and management of environmental assessment; ·Development and management of testing and researching; ·Issuing of environmental permission; ·Development of Communities	Function: ·Collection and Preparation of Information on Environmental assessment; Living environmental creation; Environmental improvement projects
Environmental policy ·Environmental management: *Undang-undang No.23/1997* ·Environmental analysis: *Peraturan Pertah No.27/1999* ·Local Government: UUNo.22/1999	Environmental policy ·Environmental management: *Undang-undang No.23/1997* ·Environmental analysis: *Peraturan Pertah No.27/1999*

3.2 Local Potential Resources

To identify the feasibility, available potential resources in each city will be evaluated.

According to the International Council for Local Environmental Initiatives (ICLEI), the City of Surabaya has succeeded the improvement of housing and community conditions, which was called the "Kampung Improvement Programme (KIP)", in early 1990s. KIP has been recognized internationally. It was pointed out that the successful factors were as follows:

- Consensus and understanding among citizen, university, and the local government about final common goal such as making local residents' living environment better;
- Promoting policymaking, project planning and implementation, and providing resources through the multi-stakeholders' participatory approach.

By detailed analysis of the KIP, it is cleared that the KIP has provided the opportunities for communities to evaluate and modify the draft improvement programme, which were prepared by implementation organizations, as well as the attitude that the local government and university go into communities. The citizen participation in daily maintenance, respect of communities' traditional style such as securing enough space for communication, as well as recognition of poor people as not problems but human resources to implement the programmes, are indispensable view point. These programme approach resulted in strengthening communities. This shows that the City of Surabaya has already experienced community participation approach in KIP. This is potential resourse for

solving present environmental management issue.

The key point of this approach is mutual aids called the "Gotong-Royong" in Indonesia. The "Gotong-Royong" is still working in Indonesia. The Philippine society also consits of similar strong communities called the "Barangay." According to author's observation at the Philippines, the Barangays, which are minimum local autonomnies, are working as pressure groups to the local governments for local development. However, the Barangay is not working as one of the environmental management sectors as seen in the City of Surabaya. In spite of weak continuity, there is a potentiality of involving multi-stakeholders such as the "Environmental Quality Council", if an certain target/goal is clearly indicated.

The City of Dalian points out in the "Final Report of the Study on the Dalian City Environmental Demonstration Zone Development" that enhancing citiens' environmental awareness, by existing schemes such as the allocation of environmental experts to the "Resident Committee", is necessary. This means that communication method between local government and citizens is already existing while the method is not used for environmental issues. That is the potential resources (scheme) of citizen participation in environmental management. The Ho Chi Minh City also points out that the development of the Environmental Quality Management Strategy (EQMS) with the participation of related parties and public hearing is indispensable. In addition, many implementing intenational assistance programme such as UNEP, ADB, etc. are also huge potential if there is a good cordination/arrangement operated by local society. Although both the City of Dalian and the Ho Chi Minh City have different social system from the City of Surabaya and the City of Cebu, the capacities of 4 cities will be enhanced by closer relationship among local stakeholders, which are key actors in implementation.

4. Approaches for Integration of Multi-stakeholders

It is concluded that the issues of strengthening the capacity of environmental management at local level should be addressed by not previous governmental viewpoint but effective partnership of local human resources from the actual viewpoint.

Considering these issues in present situation and the potential resources, the approaches to be taken by East Asian cities for better environmental managements are two types as shown in Figure 5. One is policymaking based on the dialogues between local government and related parties including citizen, private enterprise, and university as required in the City of Dalian and the Ho Chi Minh City. Although main player of environmental management is local government, its policy consists of broader opinions from various sectors. The other approach is to integrate community activities into social environmental management system because local governments' resources such as human resources, financial resources, facilities, etc. are so limited. This is appropriate approach for the City of Cebu and the City of Surabaya.

Although the difference of these two types of approaches based on existing issues, present institutions, and available resources, both appraoches are to strengthen the capacities of urban environmental management by mutual aids and good partnership among stakeholders in oder to realize common goals.

It is concluded that effective approaches to the issues of the relationship between local governemnt and citizen are:

The Governmental policy with consideration of citizens' opinions will be implemented in Dalian and Ho Chi Minh City; and

The Citizen will play an important part of social system in Cebu and Surabaya.

The former is the decentralization that closer relationship between public needs/preferences and public policy, through the local governments' going into communities, realizes to make decision-makers' sensitivities better. The latter is another decentralization that authorities and roles are giving from government to society or non-governmental sectors. These two types of decentralizations are not completely carried out in the cities, however, both approaches are reasonable to strengthen the local capacity under the decentralizaion.

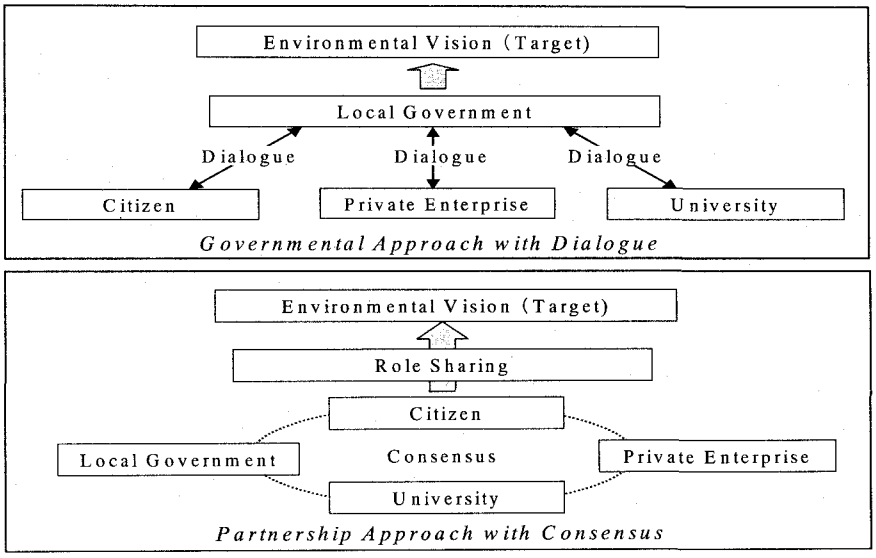

Figure 5. Approaches to Better Environmental Management in Asian Cities.

The issues to realize these two approache are not complicated. In case of the former, although government-oriented social systems have worked well up to present level, local goverments should recognize the importance of information exchange for necessary activites against further environmental problems. In case of the latter, two cities potentially have the capability of implement this approach. They should understand those resources.

5. Conclusion

This study has clarified appropriate approaches to improve urban environmental management focusing on the local societies, which are implementing concrete activities and have multi-stakeholders such as citizen, NGO, local government, private enterprise, and university. It was concluded that two approaches such as the "Governmental Approach with Dialogue" and the

"Partnership Approach with Consensus" are beneficial for urban environmental improvement in 4 target cities in Asia. These approaches are some parts of "Local Initiative", which is internationally required. The outcome of this study will be useful for international society, which is seeking "implementation and success" in place of "discussion and programme", to realize "sustainable development and environmental improvement".

In consideration of degree of decentralization, good coordination of existing and potential resources at local level through better partnership among stakeholders are arranged to implement concrete activities. As many cities pointed out, "environmental visions and targets" should be cleared to provide common basis of further actions. The issues derived from decentralization will be potential resources if we could change the way of thinking and find out appropriated approaches to solve the issues.

Even in the time of borderless, environmental management adjusted to local characteristics should be decided by local society itself. The capacity to take the most appropriate approach to the local issues is the "local initiative". The benefit of globalization for local society is not providing global standard but sharing experiences beyond the borders easily. The globalization should also be an international framework to support local initiatives.

Although the "Kitakyushu Initiative for a Clean Environment", which was put into the "Implementation Plan" of the "Johannesburg Summit", is a framework United Nation focusing on local initiatives, the studies concerning local environmental management under the situation of decentralization are still few. Further studies including the conditons for realization in the other cities are required.

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