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**Reforming Solid Waste Management
Perspectives of Concerned Citizens**

by

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ABSTRACT

The need for broad co-operation and citizen participation is expressed at workshops and meetings for the improvement of solid waste management in Asian cities. So far there has been few realistic attempts to confront the difficulties of achieving co-operation in pluralistic cities and to provide the kinds of institutions that can work for better understanding of differing points of view on the solid waste crisis. This paper sketches some of the main interests that have to be taken into account and suggests that "multi-stakeholder forums" could be an effective way to develop agreement on a hierarchy of priorities for solid waste management with citizen participation in Asian cities.

Lack of institutional contexts for comprehensive solid waste management

A sense of urgency is emerging for solid waste management (SWM) in Asian cities, and the desire to work for comprehensive solutions is evidenced by the several workshops and conferences addressing the topic in this region in the last two or three years. But, in spite of stirring rhetoric and some outstanding efforts in a few cities, cooperation for improvement will not come easily. The reasons lie beyond the usual ones that are given for lack of progress, such as insufficient funds, lack of public education, weak local organization. Asian cities (one can even say, almost all world cities) have not yet developed the kind of interactive contexts in which shared values about waste reduction and waste treatment can be articulated and reinforced, so that comprehensive policies can be enacted.

In most Asian cities today there are fundamental differences in points of view on wastes and the nature of the solid wastes crisis, and so on the potential solutions for the problems. The praiseworthy desire to establish broad co-operation for environmental improvement has led public authorities, researchers, and project directors to focus on statements of co-operation and synthesis without paying attention to the social and institutional structure of co-operation and participation.

The reformation of SWM in Asia must address the differences in values, in understanding and in interests among societal categories who produce the need for waste management and have the capacity to significantly reduce wastes. Looking at differences in attitudes is the first step in identifying common ground and building up significant public awareness and co-operation. Without the development of a widely accepted civic culture and an environmental ethic, most attempts to solve solid waste problems will remain piecemeal or "paper" plans. The culture and ethics require specific contexts for expression of ideas that can substantially change solid waste management.

This paper attempts to identify the various categories of citizens who have become, or may become, concerned about solid wastes, to set out differing points of view, and to suggest how better co-operation and understanding can be achieved among key actors in solid waste management (SWM) systems.

We will not here elaborate on the problems of solid waste management in large Asian cities (see UNCRD 1989), or the various solutions that have been proposed, nor do we address directly the national policy context, but it is important to begin with an overall conception of the components of a municipal solid waste system.³

The social-economic-institutional factors that use resources and create solid wastes are complex and, in modernizing cities, changing. Conceived broadly, a solid waste management system must pay attention to waste reduction, reuse and recycling in order to attack the fundamentals of waste problems. Thus any municipal solid waste system has at least four dimensions:

- A. **Materials/products lifecycles:** products consumed by the society and non-product materials (e.g. garden, food, and human wastes) that may be produced, consumed and disposed of in conserving or in wasteful ways.
- B. **Public institutional structures** consisting of local decision-making systems, waste management arrangements, government policies that affect waste generation, waste reuse/recycling, and treatment/disposal.
- C. **Public and private infrastructures** designed to deal with wastes (e.g. equipment, dumps, recycling facilities and programs); the structure and dynamics of materials industries, including prices, costs, the impact of international market forces.
- D. **The actors who consume and touch materials and products, and their behaviours, values and views** that affect the whole range of production, consumption, collection, treatment, disposal functions (U.S. Congress, 1989, p. 15).

This paper focuses upon key members of the last component, the actors most directly involved in and affected by solid waste management matters, on the understanding that, in fact, all humans, have stakes in decisions about consumption patterns, waste treatment, and final disposal of residues.

³ Working out ways in which those directly involved in collecting, treating, and disposing of solid wastes can influence resource management and production policies that are determined nationally (either by state or private decisions) and internationally remains a major challenge for cities today because SWM has always been treated as local matter. Yet unless those who bear the costs of disposal can persuade the initial waste generators (i.e. the producers), waste reduction cannot be largely implemented.

Stakeholders--key concerned citizens

For the purposes of this discussion, we include among "concerned citizens," not only those who are currently expressing views on solid waste matters, but those whose co-operation will be essential in effective and sustainable solutions. These may be called the "stakeholders"--the persons with particular interests--who can be expected, or should be encouraged, to enter into dialogue, to help to shape policies, and to play a role in implementation.

For major Asian cities, the main stakeholders would seem to be:

- municipal officials--both policy makers of SWM and implementers (field staff)
- elected city councilors
- people living in slums and squatter settlements
- poor people whose livelihoods depend on retrieving or recycling wastes
- affluent and middle class residents
- waste-trading intermediaries and business people depending upon wastes as feedstock for manufacturing
- local manufacturers, suppliers and advertisers
- members of non-governmental organizations concerned with welfare of the urban poor, environment, citizens' rights and safety
- environmental educators

Not all of these types of citizens in each city are presently interested in waste management. Some might not recognize immediately the full importance of waste management to their livelihoods and welfare. Others have narrow interests or fluctuating ones. But we could say that these are the main groups having a strong "latent" interest in solid waste matters. They are, obviously, very unequal in access to the resources necessary to effectively articulate their concerns and influence policies.

In the following section, the current views of the main stakeholders are sketched. These views are based on interpretations of documents, interviews and a few research studies. It remains a task for each city to try to identify and to understand the views and needs of particular actors relevant for that city or region.

Stakeholders in urban solid waste management

Municipal Officials

Municipal officials, including planners, health officers and field staff, are predominantly concerned with collecting and disposing of wastes to minimize health hazards and nuisances. The general desire is to distance people from wastes, by using machines to reduce waste handling, by restricting people's access to wastes, and by locating dump sites as far as economical from built-up areas.

They do not have the power to address waste reduction processes, or even necessarily to encourage waste reuse and recycling directly. They recognize that public co-operation is essential for a SWM system to function effectively, but until now, the concept of citizen participation embraced by urban officers has been one-sided. They exhort the public to co-operate, to obey regulations on waste disposal, but they rarely encourage people to express their needs and perceptions. Most officials fear that "open planning," which would allow residents to have a part in policy-making would be counter-productive for waste management. Most want to have a better capacity for regulation and enforcement, hoping that the threat of stiff penalties will bring general public compliance.

There has long been some interest in recovering some value from municipal wastes, and the idea that garbage represents under-exploited resources is now urged upon cities by international organizations (c.f. World Commission on Environment and Development, 1987). City officials are inclined to favour mechanized schemes that overlook the extensive use of wastes by poor people (Furedy, 1990).

People living in slums and squatter settlements

Poor people are much more likely to see wastes as resources that may be used as substitutes for regular market goods (e.g. animal dung used as fuel) than are the better off. They are not distanced from wastes and may accept a degree of intimacy with their wastes that would be abhorrent to others. They have little awareness of the specific hazards associated with accumulated solid wastes or how they might reduce the risks of their waste-strewn environs. Poor families find the requirements that they have to meet in order to benefit from municipal waste removal services burdensome; they lack the time and resources to conform with much of what the municipal authorities expect. They express resignation at the failures in municipal services. In areas with basic education, people, when asked in surveys about their needs, are likely to mention their desire for regular waste removal. Increasingly they desire a clean up of their locales.

Poor people have rarely had the chance to articulate ideas about their living environments, or to learn essentials that would make waste management ideas sensible to them.

Affluent and middle class residents

Well-off householders share the prevailing view of their garbage as a nuisance and potential hazard that first servants, and then the city authorities must deal with. Their preoccupations are with the regularity and general convenience of waste collection. They are readily mobilized to oppose plans for the siting of disposal areas near to their properties; even the presence of communal waste bins may be seen as a threat to property values, and so there may be squabbles over where such bins are to be placed. They hardly recognize that their embracing of modern consumerism and packaging has augmented waste problems, although middle-aged people will remember, when prompted, the careful, conserving habits of earlier days.

Middle class people in poorer Asian cities do view wastes as resources, and engage in source separation, if they can recoup some of their housekeeping expenses by selling wastes to itinerant collectors, but there are limits to how much inconvenience they will put up with for small returns from this saving and trading.

The attitudes of these categories of residents towards waste pickers and itinerant collectors are to susceptible to moderation, but prejudices against poor people living from wastes die hard in any society.

Poor people whose livelihoods depend on wastes

There are several categories of such people in Asian cities: children, families at or near dump sites, itinerant collectors and producers in cottage industries. For them, wastes are vital resources, and the hazards associated with handling and transforming wastes can hardly be taken into account. They have important knowledge about the nature of wastes in the city, and the actual and potential ways in which resources can be saved and recycled. In spite of severe financial and technical constraints, they apply this knowledge to earn a living. To date, no one has ever invited these waste experts and technicians to contribute routinely to the broader understanding of issues in waste management. Even when they earn as much or more than formal sector workers, social prejudice and lack of education usually prevent them from improving their living conditions.

Waste-trading intermediaries and waste-using manufacturers

Those who use urban wastes commercially obviously recognize their value. But they may be unconcerned about the savings to society at large or to the municipality (which thus has less waste to dispose of) from this recycling. Mostly they depend upon informal workers to retrieve, deliver, sort and process wastes and these workers have no bargaining power to press for improved wages and working conditions. The commercial exploiters of wastes will be reluctant

to make improvements for the benefit of workers or the immediate environment. But it is essential to understand their views and bring them into solid waste planning.

Local Manufacturers, suppliers, advertisers

These as yet are not aware of how their product design policies, modes of manufacturing, and packaging contribute to solid waste problems. They will see themselves constrained by competition, regionally and nationally, from making innovations (e.g. clean, waste-free processes) that will reduce waste generation. Strong consumer demand for environmentally-friendly products might begin to influence their thinking.

Elected city councilors

In Asian cities elected members of city administrations do not generally take a lead in integrating environmental concerns into urban policies. They are spasmodic in their attention to the needs of constituents and tend to react to crises or considerable pressure. If city clean ups or environmental fads have publicity value, their backing can be relied on, at least for a time. Key figures like mayors or city governors, can, however, be very influential and there are some examples of persons who have had an impact on thinking about the status of city cleaners, for instance. Outstanding leaders could be important in local attitudinal changes and could influence routines of waste collection and disposal. The potential role of ward politicians will depend upon the kinds of pressures that their constituents sustain for environmental improvement.

Non-governmental organizations

There are many types of non-governmental groups active in Asian cities now. Here we are concerned with two types: (i) groups working directly with waste pickers; (ii) environmental groups. The groups working for the welfare of waste pickers are those that are concerned about street children (who usually live by waste retrieval) and those aiding community development of picker communities at dumps or in squatter areas. For the most part, they are preoccupied with helping particular individuals and families to gain the education and skills necessary to move out of waste picking into safer and better work. They may be aware of wider societal issues to do with wastes, but have not the time or resources to address these; such concerns are not part of their explicit goals.

Nevertheless, these groups have a knowledge of attitudes and behaviours both among the waste workers and people who interact with them. They are working for the dignity of people who are shunned: this human status perspective is an essential aspect of solid waste issues for poor countries. Given the resources, many of these community workers will be ready to contribute to broader discussions of waste problems. Their inclusion is also vital to ensure that vulnerable and powerless groups who depend on wastes have a voice in SWM planning.

Environmental NGOs have not thus far taken a consistent interest in solid wastes. They think that other topics such as hazardous wastes and global/regional environmental deterioration should have priority. They may even think that the solutions for solid waste problems are simply those of more efficient municipal service and appropriate disposal designs. Those interested in a comprehensive approach to solid waste problems have to convince these groups that accumulating wastes are the consequence of excessive resource exploitation, inappropriate products, excessive consumerism, and environmental thoughtlessness. Once these organizations start to pay specific attention to product design, packaging, and the environmental costs of solid wastes, we can expect a leap forward in public awareness.

Environmental educators

Environmental educators in Asia who have taken an interest in solid wastes have usually been engineers who have concentrated on the technical aspects of waste collection and disposal. They have not taken a broad view of wastes from a societal perspective, integrating waste reduction, reuse and recycling into their policy recommendations. (Recommendations for recycling are based on highly mechanized, imported techniques rather than community recovery/recycling). In so far as they have been concerned with the curriculum for schools, they have tended to suggest awareness raising through anti-litter campaigns. Now, though, with more professionals taking an interest in global environmental problems, including resource depletion, there is the possibility of interesting a much wider group of educators in the basics of waste reduction, recycling and residue management.

It is likely, in some societies, that the transformation of environmental education in this field will come from the ideas and actions of environmental advocates and other fields of environment education, rather than from the engineers, biologists and planners who have primary responsibility for waste management research and training.

Forums for dialogue and policy recommendations

No city yet has a forum where all key actors can freely express their views and engage in dialogue.⁴

Part of the challenge of reforming SWM is to create and to foster the kinds of institutions that will allow interests to be expressed, points of view exchanged and conflicts resolved so that a shared civic culture can be reinforced. This process of awareness building and value-compromise does not alone transform societal behaviour for environmental improvement--

⁴ The only kind of forum is that provided by the media, and the media are not accessible to the very poor, nor are reporters likely to take a persistent interest in solid waste management unless a city faces a clear crisis situation.

planning, legislation, enforcement, expertise and funding are all necessary too--but without the development of an environmental ethic relating to wastes and wastefulness, progress will surely be more painful and slower.

We suggest that forums can be created to represent the key actors--"multi-stakeholders forums." Committees of this kind are already working in North American and European cities.

Tasks for stakeholders' forums

Initially the forums might concentrate on understanding the different interests and points of view of the local stakeholders represented. The aim should be to agree upon a conception of solid waste management and their roles in it, locally, regionally and nationally. It may be useful to work through the components of a solid waste management system, as set out at the beginning of this paper, with a view to identifying areas of agreement and of differences. (Alternative ways of representing the factors are shown in Figures 1 and 2).

Realistically, we have to accept that there will be no quick consensus on the multiple social, economic and technical issues related to solid waste management, especially where economic and health interests clash. Yet, there should be core areas of agreement and overlapping interest among some of the stakeholders that may provide the basis for working towards more agreement.

From this point the forums can attempt to establish a hierarchy of values and a set of priorities for action to influence policy-making and public awareness.

National and local concerns

Although forums would seem to have the power to influence thinking only at the local level, they should keep before them an awareness of national and global issues of resource use, waste generation and product/process design, both because "thinking globally" helps people to "act locally" and because the stakeholders should aim to be leaders in the transformation of values that will produce different and more manageable life styles and production processes.

The participants should bear in mind essential concerns that may easily be lost sight of in solid waste management planning. Some of these, in our opinion are:

- that local waste problems can only be truly understood by examining national and international resource exploitation, pricing policies, and technologies of collection, treatment, and disposal;
- that community participation must move beyond exhortations and slogans to be rooted in realistic modes of local participation;

- that equity concerns must be integral to any planning, i.e. that all urban dwellers are entitled to hygiene education, access to waste information, and adequate waste removal services;
- that the work of those who have to handle wastes must be dignified and made safer (see Appendix).

The stakeholders have a responsibility to attempt to influence thinking and action in several directions--at the grassroots level in neighbourhoods, within the city administration, among product and process designers, and nationally in economic and resource management decision-making. They must be able to make policy recommendations to stop the trend to sell/purchase-consume-dispose behaviour that is unchecked by any consideration of the costs to the environment of resource consumption and waste disposal.

These are complex and challenging tasks; the stakeholders' forums are not to be thought of as merely "think tanks," or just committees. These institutions have to be supplied with the resources necessary to carry out the tasks. And, since local action to improve waste generation, recycling and disposal will have significant national implications, cities should expect support from national governments in addressing the reformation of solid waste management.

Citizen participation

In concluding, we wish to emphasize that the institutionalization of solid waste management planning, as conceived here, must always be subject to correction; it must remain flexible; it must evolve in response to changing conditions. The main safeguard against excessive bureaucratization and co-option is keen awareness of people of what is at stake for themselves and the society at large. This awareness may begin with environmental drives and campaigns but it becomes consolidated only when people have knowledge and understanding of the relationships of people to nature, and the relations of production and consumption that produce solid wastes. With this comes the recognition that wastes are best managed as resources if they are regarded as remnant materials and kept clean and separated to facilitate reuse, recycling and, where necessary, treatment.

We think that this awareness will come with the development of a "people's science" in the developing countries that will synthesize the knowledge of common people with the insights of scientific research in a way that makes vital information on basic needs accessible to large numbers of people with elementary, or no, formal education. The emergence of such forms of knowledge is seen now in social forestry and integrated farming movements in rural areas; urban hygiene education can, we hope, learn from the successes of such rural movements. The kind of institutional innovation and dialogue that has been suggested in this paper may become divorced from ordinary people's needs unless it is kept responsive to genuine citizen participation.

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APPENDIX

KITAKYUSHU DECLARATION

International Expert Group Seminar on Policy Responses Towards
Improving Solid Waste Management in Asian Metropolises

16-21 October 1989
Kitakyushu, Japan

A group of experts met in Kitakyushu, Japan on 16-21 October, 1989 and discussed and explored ways and means to improve solid waste management (SWM) in Asian metropolises.

The group recognizing

- a) the need to consider SWM problems and issues in the broader context of rapid urbanization and its associated problems;
- b) the need to promote local/metropolitan SWM service improvements while paying attention to global environmental/resource implications;
- c) the need for commitment to enhance the SWM sector in providing efficient, effective, and equitable services;
- d) the need to create lifestyles conducive to waste reduction, recycling, and resource recovery;
- e) the need to promote equitable utilization of resources and access to technology between countries and between regions within a country;
- f) the need for central and provincial governments to provide policy and programme support for urban SWM services; and
- g) the need for society to recognize the value of services provided by SWM workers and waste recyclers.

declares that:

- a) SWM systems should be developed with flexibility to accommodate prevailing local socioeconomic conditions in Asian metropolises which are fast changing;
- b) SWM is an essential service and should be extended to low income, marginal settlements regardless of affordability and legal status of land tenure;
- c) Asian governments have to be more committed to systematically diagnose SWM problems and formulate national action programmes to increase efficiency and effectiveness;
- d) National governments should ensure adequacy of the financial base of the metropolitan authorities and availability of basic laws to impose user charges and effect cost recovery;
- e) Governments should promote active community involvement in the decision making process and have a sustained programme to provide public education on SWM, environmental protection, public health, waste reduction, recycling, and resource recovery;
- f) Asian metropolitan authorities should recognise the need for recycling to reduce the amount of wastes generated and to actively facilitate the efforts of the informal sector waste recyclers; and
- g) Technical cooperation in the field of SWM should be strengthened among Asian metropolitan and local governments and supported by national governments as well as multilateral and bilateral development agencies.