

InFORMAL-Formal

is a study carried out by a network of organizations in 3 diverse countries : India, The Philippines and Cambodia, all of which offer rich learnings to the region. It examines the condition of the informal recycling sector through policy, legislation, interventions at the grass roots and the implementation of the concept of Extended Producer Responsibility, (EPR). Through this study, it becomes clear that EPR must be brought into these countries with a greater responsibility on producers. However, it also becomes clear that EPR here must be implemented in a manner that is inclusive of the recycling chain comprising wastepickers, waste traders and reprocessors, creating both safe work opportunities while fusing the informal and formal sector in a new waste regime.

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THE FOLLOWING ORGANIZATIONS COLLABORATED TO UNDERTAKE THIS STUDY:

India

Chintan Environmental Research and Action Group is a registered, non-profit organization working on issues of sustainable, equitable, consumption through grass roots work, research and outreach. We work in the area of the informal sector and recycling, waste management and toxics, environmental education and child environmental health. Our work includes organizing the informal recycling sector, helping build their capacities and collectively finding opportunities for them to equitably participate in the delivery of urban environmental services.

Philippines

The Global Alliance for Incinerator Alternatives / Global Anti-Incinerator Alliance (GAIA) is a global network of non-government organizations, individuals, community-based organizations, academics and others who are advocating to end all forms of incineration. GAIA also promotes safe, sustainable, economical and just waste prevention and discard management systems.

Smokey Mountain Resource Recovery System (SMRRS) is a non- government organization established under the guidance of Fr. Benigno Beltran, SVD, of the Parish of the Risen Christ in Tondo, Manila.† It provides alternative or supplementary livelihoods to the community of wastepickers in Smokey Mountain such as production of compost, ornamental plants and handicrafts. It hopes to be able to organize the wastepickers to enable them to make decisions as a sector.

Mother Earth Foundation is a non-government organization whose members are actively involved in conducting free workshops on ecological solid waste management all over the country. They played a very important role in the lobby and subsequent passage of the Philippine Clean Air Act and Ecological Solid Waste Management Act. They are also active in the campaigns for reforestation and against Genetically Modified Organisms (GMOs).

Cambodia

Community Sanitation and Recycling Organisation (CSARO) has its roots in 1997, when a group of development workers, concerned about the plight of waste pickers initiated a project to examine the social and economic conditions of waste pickers and their families. Following this, the group established the Community Sanitation and Recycling Organization (CSARO) similar to the Khmer words for to forage. CSARO aims to achieve this by encouraging and motivating urban poor people to improve their capacity and their environmental, social and economic conditions. CSARO's focus areas are: community organizing and community infrastructure; hygiene awareness education program; waste picker development program; solid waste management program; and mobile outreach team program.

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The report was researched and written by several persons. Of these, the main ones were Bharati Chaturvedi Ira Beau Bacongus Kora Heng Abhay Ranjan Moushmi Ghosh Roy Sanjay Gupta also assisted in some aspects of the study.

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This publication is not copyrighted. We encourage readers to use the information for the purposes of better understanding the informal recycling sector and protecting their livelihoods, as well as for encouraging the principles of EPR. However, we also request that this publication be acknowledged and sited wherever data from it is used.

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End NOTES

Chapter 1

INDIA

¹ Ibid. Note 5. pg 19. (Recycling versus incineration, 1992. Sound Resource Management Group Inc.)

² Government of Maharashtra Circular No: Ghakavya 1001

THE PHILIPPINES

ⁱ Interviews with the Smokey Mountain waste pickers and focused group discussions on 23 August 2004, 8 September 2004, 18 September 2004 and 5 October 2004.

ⁱⁱ Part III, Rule IX, Section 2(c-3) IRR of RA 9003

ⁱⁱⁱ Part III, Rule XIII, Section 2(h). IRR of RA 9003

^{iv} Part III, Rule 4, Section 1 (o). IRR of RA 9003

^v Information volunteered by Ms. Sonia Mendoza, Commissioner, National Solid Waste Commission.

^{vi} Implementing Rules and Regulations of RA 9003.

^{vii} Account by Lito Ferreras. 10 November 2004.

^{viii} Section 17 (2-iv) RA 7160

^{ix} Section 37, RA 9003

Chapter 2

THE PHILIPPINES

ⁱ KALAH-CIDSS. Website last visited 25 October 2004.

ⁱⁱ Factsheet on OWWA's investment in the Smokey Mountain Project. Last updated on 31 July 2003. Website visited 12 November 2004.

ⁱⁱⁱ Interviews with SMRRS staff on 23 August 2004.

^{iv} Information volunteered by Lito Ferreras. 23 August 2004.

^v Information from the women of the Smokey Mountain Ornamental Garden. 9 October 2004.

^{vi} Bautista, Victoria A. A Decade of Governance Innovations and Gaps in Poverty Alleviation. University of the Philippines College of Public Administration and Governance

^{vii} Interview with Jojo Angeles, teacher at Mithing Pangarap Foundation

^{viii} Brochure, SABANA Philippines. ERDA Foundation, Inc.

^{ix} Conversion rate used in this report is 56 Philippine pesos to 1 US dollar.

^x Interview with Linis Ganda president, Leonarda Camacho. 20 September 2004.

^{xi} Interview with Ms. Leonarda Camacho, Founder, Women's Balikatan Movement and Linis Ganda. 20 September 2004.

^{xii} Metro Manila Linis Ganda: Metro Manila Federation of Environment Multi-Purpose Cooperative. Summary of Purchase Report from January to December 2002. Website visited on 6 November 2004.

^{xiii} As cited in Gonzales, Eugenio M., Revised December 2003. From Wastes to Assets: The Scavengers of Payatas. Website visited on 6 November 2004.

^{xiv} Implementation of RA 9003 and Challenges Under the Arroyo Administration. Talk given by Sonia Mendoza, NGO Representative to the National Solid Waste Commission at the Ecowaste Coalition General Assembly. 15 September 2004. Environmental Studies Institute, Miriam College. Philippines.

^{xv} Presentation made by Albert Magalang, Chair of the National Solid Waste Commission. Ecowaste Coalition General Assembly. 15 September 2004. Environmental Studies Institute. Miriam College. Philippines.

^{xvi} Focus group discussion with waste pickers on 5 October 2004.

^{xvii} Basilio, Robert JA. Ecological Solid Waste Management is a cheaper, longterm solution. 26 November 2001.

Chapter 3

THE PHILIPPINES

ⁱ Esguerra, Reynaldo L., General Activity of Life Cycle Assessment in the Philippines. Department of Science and Technology. http://unit.aist.go.jp/lca-center/lca-activity/symposium/02_sympo/021107_document/87.pdf. Website visited on 8 November 2004.

ⁱⁱ Basilia, Blessie A. and Leonides C. Valencia. Polyethylene Terephthalate (PET): Waste Recovery and Recycling in the Philippines.

http://www.aprcp.org/roundtables/4th/Papers/Basila&Valencia_W14.htm Website visited 8 November 2004.

ⁱⁱⁱ Information from Mang Leo. 23 August 2004.

^{iv} Interview with Jun Pontilla. 8 September 2004.

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INTRODUCTION

The first decade of the twenty-first century is half over. Standing where we do currently, there is little doubt that to move into the future means to upscale sustainable models of consumption and minimize the waste it creates. These models also have to be equitable and responsible, moving towards a convergence of the many broader goals ahead of us in the next decade.

How can any organization take a bite off a problem so large, it is scarcely possible to see it completely all at once in a single glance? We know that there are several demonstrated, innovative approaches to the problem. Most of these are anchored to any single model, or project. How can these ideas strike roots elsewhere too?

Chintan, having worked with and interacted with organizations from across India and elsewhere in the world, has been struck by the rich ideas contained in small initiatives. We have ourselves brought back many learnings to our work. However, in the absence of a wider interaction, these ideas remain seeded locally. One way to overcome this barrier is to create networks of learning and communities of practice. Since our entry point into urban poverty and sustainable development is through issues related to waste, waste recyclers and toxics, we chose to develop the idea around this theme in order to build upon our existing work and perspective.

This initiative sought to seek pointers from a number of initiatives across some parts of Asia. There were good reasons for this. Traditional Asian consumption patterns have, fortunately, remained much less than those of others in the western world. That this continues to remain largely true is borne out by the fact that figures put out by leading research agencies like the Japanese Global Guardian Trust suggest that per capita waste generation in Asia is on an average, one-tenth of per capita waste generated in the United States. And yet, the danger remains that in the prevailing world order, Asian middle-income families and citizens adopt consumption patterns that approximate those of the West instead of continuing to follow the traditional patterns. Part of the problem is that the models to learn from are mostly West-oriented. This is, in part, due to weak cross-country channels within Asia, making for weak demonstration and adaptation possibilities.

Clearly, in India, we need to learn largely, though not exclusively, from similar regions and possibly, comparable challenges. Besides, many of the most seemingly compatible models emerged from this region. It is also interesting to reflect on how often the aspiration for an Indian city is articulated in terms of comparison with developed countries. Delhi, some hope, will be like Singapore some day. But will Singapore ever have Delhi's rich climate of debate?

Can we run Delhi's garbage rickshaws within Singapore's transport system?

In order to be able to initiate useful cross learning, we chose to work with the Philippines and Cambodia because our initial exploration suggested that these countries had many synergies that could strengthen each other. Both these countries offer a range of learnings on waste, as does India. This interactive style of work also resulted in various voices, as it were, that can be discerned in the chapters on the various countries.

In each country, the emphasis was on a unique human resource these countries depend upon for substantial assistance with waste handling: the informal waste recycling chain, comprising wastepickers, waste traders and even, sometimes, waste reprocessors. Given the waste produced on account of new kinds of packaging and products, the issue of Extended Producer Responsibility also becomes a matter of concern. While the term, as it has been applied till date, refers to the formal sector, we demonstrate in this study that in our three countries, and in other similar ones, it is imperative to fuse EPR with the work of the informal sector.

This report is expected to bring our findings to the larger arena of policy makers, corporates, municipalities, waste recyclers such as waste pickers and itinerant waste buyers and the many other players who are involved with waste in some form or the other, in each of the three countries. This is also seen as the beginning of a network that collectively delves deeper into the issue, both as practitioners and in other roles.

Yet, our conclusions tell us it is also important to see waste for what it is: an opportunity to reduce poverty, improve the health of some of the poorest workers in our cities, enhance environmental quality, enable gender equality and shift a hazardous industry into cleaner, safer livelihoods. Appropriate waste handling is seen to be one instrument by which it is possible to come close to achieving the Millennium Development Goals.

Whether Asia, where many countries rank low in their achievements of these, is collectively able to seize this opportunity or not depends on whether we can muster the political will for it. Gauging by the emerging innovative practice by both government officials and non-governmental organizations, some fragments of innovative legislation and increasing involvement of civil society, these ideas might well become mainstream.

Bharati Chaturvedi

Director
Chintan Environmental Research and Action Group

The INITIATIVE and the APPROACH

The objective of the initiative was creating and sustaining a learning network on waste among like-minded Asian NGOs in the area of waste prevention, Extended Producer Responsibility (EPR) and indigenous recycling initiatives as part of mainstream Solid Waste solutions through the informal sector.

The proposed network was to bring together NGOs and other likeminded organisations from 3 Asian countries. This learning network on waste was based on a process of collective planning and decision making by GAIA (Global Alliance for Incinerator Alternatives), Chintan, Smokey Mountain Resource Recovery Centre, Mother Earth and CSARO (Community Sanitation and Recycling Organization).

It was expected that to begin with a participatory study, which involved both various players and a partner from one of the other countries would be vital. This would lay the grounds and the understanding that was required for future work. The Japan Foundation in New Delhi was approached for support for this unique project.



A broad guideline was made and circulated to everyone. This was then discussed at the Zero Waste Asia meeting in Seoul of groups working on non-incineration based approaches waste in Asia, during the month of June, 2004 and ideas for this sought from various participants.

The first country to be targeted for work was the Philippines, where the research activity was begun at once. The study was discussed in detail during a visit from an Indian participant, with many similarities drawn out through group discussions and site visits. A similar approach was adopted for both the other countries- Cambodia and India. The comments of the visitors and the elements that were of special interest to them were specifically included.

The country research comprised focus group discussions with wastepickers and traders, interviews with various players, site visits and secondary research. In each country, the host organization was responsible for the production of a report, photographs and circulating the compiled information and chapters.

It is for this reason that there is a stylistic variation in the three chapters of each country, as the project particularly allowed for such dissimilarity and in fact, welcomed it. In the case of Cambodia, the role of interpretation and translation played an important one.

The final structure of the publication was then created in India, where it was edited and produced. The study will now also be released and used in the Philippines and Cambodia as an advocacy and learning tool.

In the future, more experiences will be added to this one, enriching and informing all our collective work.

Introductory Note 1

What is Extended Producer Responsibility (EPR) ?

Extended Producer Responsibility (EPR) is a concept applied to a product throughout its life cycle. It aims to promote the development of sustainable production and consumption systems through more efficient resource use and a drop in the consumption of resources.

The ultimate goal of EPR is *"sustainable development through environmentally responsible product development and product recovery."* The theory is that by making producers pay for the waste (wasted resources and post consumer waste) and pollution they create, they will have an incentive to incorporate a broader range of environmental considerations into both their product design and choice of materials, thereby reducing consumption of resources at the various stages of the life-cycle of a product or package.

In this framework, the responsibility of a product is shifted onto the product system and the producer. It is based on the premise that the primary responsibility for the environmental impact during the production process (including extraction of raw materials) and after the product is discarded, is that of the producer of the product.

As such changes also imply a possible increase in costs, mechanisms for these are also built in, by shifting such costs from government and taxpayers to producers and consumers.

EPR is not:

- A means of cleaning up pollution
- A basket of end of pipe technologies
- A solid waste management scheme

Examining Producer Responsibility

There are many paths along which EPR plays out. Each path puts responsibility onto the producers. Thomas Lindquist, who originally developed the concept of EPR in Sweden, has identified five basic types of producer responsibility. These are :

Liability

When the producer is responsible for environmental damage caused by the product in question.

Economic responsibility

When the producer covers all or part of costs for collection, recycling or final disposal of products manufactured. A fee can be levied to undertake this responsibility.

Physical responsibility

When the manufacturer is involved in physical management of the products or of the effect of the products. Examples of this are managing the total 'take back' system for collecting or disposing of products.

Ownership

When the producer assumes both physical and economic responsibility.

Informative responsibility

When the producer is responsible for providing information on the product or its effects at various stages of its life cycle.

The ultimate goal of EPR is "Sustainable development through environmentally responsible product development and product recovery."

Operationalizing EPR

EPR can be operationalized through a number of instruments. Many of these have been tried and tested in various parts of the developed world for their efficacy. Some examples of these instruments are :

Deposit refund systems

Deposit refund systems can encourage reuse, but may also provide monetary incentives to the consumer to return the product or packaging, creating an infrastructure for its collection and recycling. Ten states and one US city, most Canadian provinces and many

European nations have enacted beverage container deposit laws. Deposit refund systems also exist for batteries and some hazardous products. In India, glass soda bottles are a case in point, where a deposit amount incentivizes return by the consumer.

Product charges

Product charges influence the choice of materials used. An eco-tax levied in Belgium reduced consumption of PVC. In the European Union, manufacturers of automobiles are responsible for taking them back for free. This includes 85% recovery by weight by 2002 and 90% recovery through recycling by 2015. In the same case, many toxic heavy metals are not permitted : lead, chromium, mercury and cadmium.



In India, a reverse trend is seen, where less sustainable products like plastics are priced so low that they readily substitute more sustainable materials across the spectrum. Other means of impacting the product used include procurement principals that favour more sustainable materials, removing subsidies on unsustainable or undesirable virgin materials and mandating minimum recycled material content.

Advanced disposal fees

These fees levied in advance, usually as part of the cost of the product and are designed to influence the product design and choice of materials used. They are sometimes refunded to consumers, but generally the consumer is unaware of the fee. Austria has implemented such a fee for refrigerators and refundable disposal fees are required on automobiles in Sweden. The best known example of this is the Green Dot, or

Grüne Punkt, where packaging already has an additional tax on it, so that its collection and recycling costs are met.

Voluntary agreements tied to mandatory regulations

These agreements are like a carrot and stick policy. For example, if the government decides that a particular material is undesirable or needs greater recycling quotas, then it will first ask the industry to voluntarily find ways to address the problem. If the problem is unable to be addressed through such voluntary steps, then the government can bring in mandatory regulations. The voluntary deposit system for aluminum cans in Sweden, for example, enabled the aluminum industry to achieve the government mandated recycling rate.

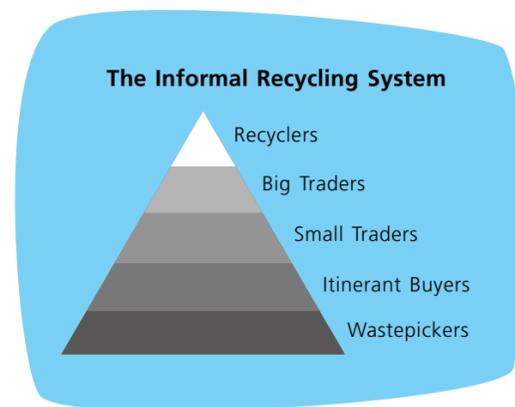
Introductory Note 2

What is the INFORMAL Recycling Sector ?

Recycling in developing countries often takes place through a complex chain comprising a huge mass of workers involved in the informal sector. This sector includes waste pickers, small middlemen (kabaris in India), itinerant waste collectors, and big waste traders. They are not formally recognized and depend on recyclable waste mined out of the city's dust bins, waste dumps, offices and other sources. Since they are not recognized, their work is virtually free for the municipality. Yet, at the levels of the wastepickers at least, many earn an equivalent of minimum wages or less.

Hence, while recycling is carried out by the poor and offers them a livelihood, it is fraught with risk. The immediate burden of the toxic waste is borne by them since there are almost no satisfactory systems or designed facilities in place where work safety issues are addressed. Although waste pickers are the backbone of the waste collection process in, small traders are also important components of the chain. They buy the waste from waste pickers and sell it to big dealers who deal with specific items and materials, sorting, bailing and trading, playing the highs and lows of the market.

The informal sector of recycling works like a pyramid . The first layer comprises several hundred thousand men, women and children in urban pockets who mine garbage heaps and bins for recyclable wastes like plastics, paper and metals. At the second layer come the small middlemen, often marginalized in many ways themselves, who buy waste from the wastepickers or rag pickers. They in turn sell the waste to the third layer, comprising large buyers who own huge godowns.



Finally, at the top, devouring all the labor and materials from below are the actual recyclers themselves. Most of the city interacts with the first and the second layer, whose labor actually propels recycling in the three countries studied. These are also the repositories of knowledge and information about waste at the local level, and have no inhibitions – caste-based or otherwise – about handling waste.

Each country has its own specific features of such trade. In Cambodia and the Philippines, wastepickers work primarily at centralized landfills or dumpsites. In India, there are very few wastepickers at dumpsites, moving along highly territorial beats instead.

They trade in a vast variety of materials. Some sub-categories may be acceptable in one country but not in another. Such disparities are seen even within different countries.

Given below is a comparative rate chart of the rates that wastepickers receive for various materials in the three countries studied. Note the similarities for cartons and glass. Plastics are represented as a range, but this table does not individually include the range of plastics.

ITEM	RATES (USD)		
	Cambodia	India	Philippines
Old newspaper		0.1	0.04
Waste Paper	0.06	0.18	0.01
Carton	0.05 – 0.1	0.05 – 0.07	0.02
Glass	0.03 – 0.3	0.02	0.01
Plastic	0.17 – 0.26	0.18 – 0.2	0.04
Aluminium	0.01 – 0.971	1.47 – 1.6	0.03
Copper wire		1.8	

The people who comprise such a waste chain are the focus of this study, with an emphasis on the wastepickers and small traders.

Chapter 1

LOCATING the Sector in Policy and Legislation

Comparative Summary

The three countries we have studied follow different systems of governance. Yet, there are many similarities in the manner in which their legislation with respect to waste is framed.

The clearest similarity is ironically the absence of any acknowledgement of wastepickers, waste dealers and even reproducers in such legislation that deals with waste management. In both the Philippines and India, recycling is a stated desired activity. Yet, neither discuss the needs of the recycling sector, an active player and primary stakeholder in the area. In India, however, given the wider movement for social security for the informal sector per se, there are some provisions that can be applied to the recycling sector as well. Other benefits that have been used are linked with a long history of struggle in India for the dignity of those undertaking traditionally 'unclean' jobs, such as scavenging. In other countries, such policy does not exist, in part due to different historical developments. It appears that there is therefore, very little understanding of the issue in all these countries within policy makers. Where there is some indication of awareness, there is little actual mention of how the sector may be included.

Another repercussion of some policies is the damage these are causing to the sector through loss or down-gradation of livelihoods. In Cambodia and India, privatization has led to job loss, particularly where it has included door-to-door waste collection, as many models do not integrate existing waste pickers. However, in both cases, where they do, there has been an upgradation in the standard of work for the wastepicker.

In the Philippines, a similar threat is posed by the Republic Act (RA) 9003, which, as it is implemented, makes wastepicking without the consent of the private operator illegal and the wastepicker criminally liable. Already, itinerant wastepickers have been arrested for allegedly violating anti-littering laws and such legislation will justify the further loss of what is already a degraded livelihood.

There is a unanimous agreement that children working as wastepickers must not be encouraged. In India, this is prohibited, although this is not possible to implement all at once, owing to the complexities involved. In the Philippines, it is also prohibited, but the law contains loopholes that allow the parent or guardian to take this decision. In Cambodia, government initiatives to wean children away, mentioned in the next section, also indicate this train of thought.



It is also interesting to see what impulse policy on waste in each country originates from.

In India, there is an emphasis on addressing diverse problems through a string of legislation. None of these emerge from an overarching stated policy on waste. Each rule is strictly focused on 'handling' either a type of waste or specific materials. Many of these laws are a technical, not social response to stated problems around which public pressure has been built.

The Philippines have a much broader vision about waste and its entire life cycle, and this also covers the idea of 'polluter pays.' As a result, waste is sought to be minimized and dumpsites closed down. Its wisdom also lies in allocating space locally for waste management and involving communities while successfully

implementing source segregation. The Philippines government has also recognized the potentially toxic nature of waste, thereby banning incineration and protecting public health.

Cambodian laws are aimed at aestheticising the environs by the direct tackling of waste by removal and dumping. In this, they have also undertaken privatization as a primary means of doing so. Since these laws are still evolving, one sees in them a sincere attempt at incorporating practices from around the world, although these are proving to be inappropriate for the context in which they are being applied.

Broadly, the laws in the countries studied are still evolving and there is still a possibility to amend them so as to incorporate both the experiences of the country itself and those of other Asian countries covered in this study.

India

There is no Indian policy document which examines waste as part of a cycle of production-consumption-recovery or one that perceives the issue of waste through a prism of overall sustainability.

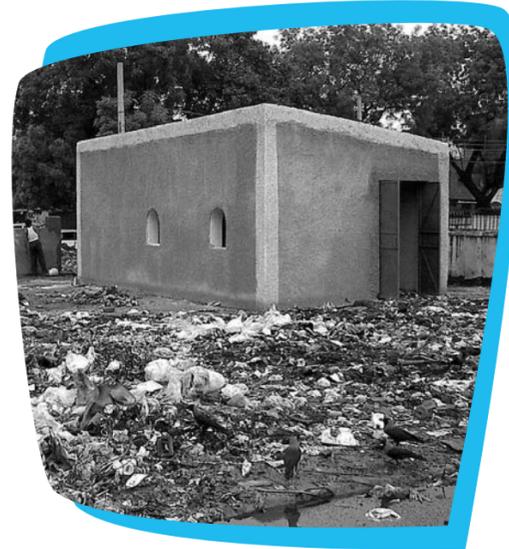
Policy that impacts either waste or those working in it has been fragmented and even, contradictory. Often, the fate of waste is determined in part not by policy but by legislation.

Most waste in Urban India immediately falls under the purview of the many Municipal Acts that exist in various part of India. Most of these Acts allocate all ownership of waste with the Municipality, thereby rendering other informal players both illegal and vulnerable to the orders of the municipality.

However, since the 1990s, there has been other views on waste and its handling. This has to do with both the increasing amounts of waste being generated and the beginning of the discussion of urbanization and its accompanying civic problems. Another important factor was the plague in the western town of Surat in 1994, linked by some with poor waste handling. One of the earliest committees to look into solid waste management issues was appointed in 1995 by the Planning Commission as part of its initiative of cleaning cities. This was the Bajaj Committee, headed by Dr. Bajaj, a medical practitioner.

A public interest litigation, (PIL), B.L Wadhwa Vs. the Union of India was filed in the Supreme Court in 1996, with a plea for improved municipal functioning in Delhi. In 2000, another PIL in the Supreme Court led to the appointment of a committee under the chairmanship of Asim Burman, a bureaucrat well known for his management of Municipalities, to look at the various aspects holistically. The Asim Burman Committee report was submitted to the Supreme Court, becoming the basis for Municipal Solid Waste Rules 2000. The PIL also led to appointment of various government committees to see sectoral aspects of the problem. One of the outcomes of the PIL was the enhanced capacity within

government to deal with the issue, including in the Central Pollution Control Board (CPCB), which was designated as the monitoring body in these cases. The next stage was when the MOEF was asked to make Rules for Solid Waste, which finally resulted in the Municipal Solid Waste (Management and Handling) Rules, 2000. At the same time, between 1996 and 2003, there has been a lot of discussion and policy making in the case of plastics, with an emphasis on plastic bags. In some cases, this has positioned the informal recycling sector as a necessary actor in recycling, though the sector's needs are not typically addressed. At the same time, Rules were also being framed for Medical Waste handling. These were the Bio-medical Waste (Management and Handling) Rules, 1998, amended in 2000.



These came about in part due to the public opposition to the orders of the Supreme Court in the B.L. Wadhwa case for mass incineration of medical waste. Later, as a result of other litigation, the Hazardous Waste (Management and Handling) Rules 1989, were amended in 2000 and 2002.

Parallel to this has been the Unorganized Sector Bill, under which various benefits are available under to the sector. This is an important scheme but it has yet to come into force and still requires strengthening. Under this scheme, informal sector workers, a category that is inclusive of wastepickers by name (as ragpickers), will receive various forms of social security. There is also a ban on children working in this occupation as it is classified as hazardous.

A third arm of policy that is impacting waste recyclers and their livelihoods are the Master Plans. Masterplans are made in order to determine land use for various purposes. It determines where housing, schools, parks and even landfills may be sited. It is silent about the informal sector needs.

Within this framework, some of the most important legislation is discussed below with respect to their acknowledgement of the informal sector and impact on them.

NATIONAL LEVEL LEGISLATIONS:

There have been three types of legislations impacting or referring to wastepickers in general. These are detailed below.

Legislation related to Solid Waste:

1. Municipal Solid Waste (Management and Handling Rules), 2000

Ministry of Environment and Forests, Government of India, September 2000

Of the many legislations, the most important have been the Municipal Solid Waste (Management and Handling) Rules, 2000.

The rules acknowledge the importance of and in fact, mandate both segregation of waste and its recycling. Both these are amongst the chief activities undertaken by the informal sector. However, while they discuss technology, monitoring and some standards, they do not mention the informal sector anywhere. Recycling here is described here as the process of transforming segregated solid wastes into raw materials for producing new products, which may or may not be similar to the original product. The legislation also allows for incineration and pelletization with or without energy recovery and suggests that this may also be covered under the ambit of recycling.

As a result, we find that the Rules are unable to link up existing good practices on the ground with policy. The main suggestions of segregation and recycling are already being undertaken by the informal sector, but the Rules do not actually mandate the functioning of the sector. On the other hand, by suggesting technologies like incineration and other waste to energy systems, they actually allow for a displacement of the sector, since these technologies compete with the wastepickers and waste handlers for high calorie dry waste.

The emerging emphasis on door-to-door collection of waste, as a result of this, is also a double-edged sword. When wastepickers are seen as the means by which such private operations can be undertaken, an opportunity emerges. When it results in privatization through big players, wastepickers are displaced, and an opportunity for both equitable waste handling, reducing and recycling materials is lost.

2. Manual on Municipal Solid Waste Management

Prepared by Expert Committee, Constituted by Ministry of Urban Development and Poverty Alleviation, Government of India. January 2000

It is instructive to examine the manual that was prepared by the MUDPA, after much deliberation. While it is not a policy document, it is the first document of its kind and has been used extensively by municipalities across India. The manual focusses on technical issues.

Its recommendations with regard to recycling include:

Resource recovery through sorting and recycling i.e. recovery of materials (glass, paper metal etc) through separation, for an economically and environmentally sustainable solid waste management system.

Suggesting that recycling is next only to waste reduction as a waste management option. Recycling is an important factor that helps to reduce the demand on resources and the amount of waste to be landfilled.

It is clear that here too, an opportunity has been created for the informal waste recycling sector, although it does not actually acknowledge the sector by name and is therefore not able to formally take it into account.

3. Solid Waste Management in Class 1 Cities in India

Constituted by Hon. Supreme Court of India headed by Mr. Asim Burman Municipal Commissioner Calcutta Municipal Corporation. March 1999

This is perhaps one of the most important committees that clearly acknowledges the work of the recycling sector and grants its rights over recyclable waste. Its terms of reference in our context included examining the existing practices and to suggest hygienic processing and waste disposal practices and proven technologies on the basis of economic feasibility and safety, which the Corporation/Government may directly or indirectly adopt/sponsor. It also included examining and suggesting ways to improve conditions in the formal and informal sector for promoting eco friendly sorting, collection, transportation, disposal, recycling and reuse.

It made some far reaching recommendations with regard to recycling and the informal sector. These included:

Organizing wastepickers to collect recyclable waste from shops and establishments. It also acknowledged that these wastepickers help reduce the burden of Urban Local Bodies body by several million rupees annually in collection, transport and disposal cost and saving of landfill space.

Encouraging recycling: at least 10% of the waste produced in India can be reused or recycled. Part of it is collected by wastepickers and the rest goes to the landfills. Recycling can be encouraged by promoting the recycling industry through incentives like land allotment, power, water on priority, tax holiday, preferential purchase of recycled products by government and semi government bodies.

Taking all out efforts to retrieve recyclable material as feed stock to the recycling industry. Segregation of recyclable waste at source is not seriously practiced.

Allowing the Informal sector to collect the following types of waste:

- All types of paper and plastic
- Cardboard and cartons
- Containers except those containing hazardous chemicals
- Packaging
- Glass
- Metals
- Rags, rubber, wood
- Cassettes, computer diskettes, printer cartridges, electronic parts
- Discarded clothing, furniture and equipment.

Unfortunately, these recommendations did not find their way into any legislation, and hence, did not become law.

4. Report of the High Power Committee on Urban Solid Waste Management in India, headed by Prof. B.S Bajaj Member Planning Commission. Constituted by Planning Commission Government of India. 1995

It is significant that the Bajaj Committee, formed soon after the plague outbreak in 1994, made specific space in the waste management framework for the informal sector. This was in sharp contrast to the Municipal Corporation of Delhi's ban on the work of wastepickers during and after the plague.

Some of the recommendations included:

Replacing the informal sector scavenging from roadside dumps and disposal grounds by organised ward level recycling and recovery centres, which could be managed by NGOs of wastepickers. Municipal authorities could also employ ragpickers for this.

Giving financial assistance to industries engaged in processing of garbage to upgrade their technology.

Assessing the state of present technologies used for recycling pilot scale studies to develop new technologies and upgrade the existing ones.

Promoting the use of products made of recycled materials like paper, plastic or glass through legislative and administrative measures.

Encouraging recycling through fiscal incentives.

5. Waste to Energy Policy

Promoted by The Ministry of Non-Conventional Energy Sources (MNES). 1995

The MNES has as its mandate facilitation of non-conventional energy production and usage. Waste to Energy is one of its stated policies, for which it provides incentives. This includes:

Financial assistance up to 50% of the capital costs of the project, limited up to for a demonstration project. Offering Urban Local Bodies financial incentives for providing garbage free of cost to the project site and land on long-term basis on nominal rent. Apart from the MNES, the Indian Renewable Energy Development Agency, a Government of India enterprise, give about 70%-80% financial assistance to waste-to-energy projects.

On the other hand "on an average, recycling saves three to five times as much energy as is produced by incinerating municipal solid waste."¹ While one megawatt of coal based energy costs about USD 1.2 million, energy from waste can exceed USD 2 million. The same subsidy if provided for recycling can build more sustainable and long-term systems in India. Hence, promoting waste to energy with a focus on technologies

that directly produce electricity actually loses the best option to save energy. Moreover, the Indian experience has been that waste generated here is not suited for incineration, as it is low in calorific value, high in inert materials and comprises largely wet waste. By promoting such policies, energy is particularly sought out through high calorie waste, such as paper and plastics, thus setting up a direct competition with recycling and the recyclers. The bias is enhanced if we consider the fact that a similar subsidy does not exist for other waste products such as compost or recycled goods, and places them at a disadvantage vis-a-vis energy.

6. The Draft National Environment Policy. Ministry of Environment and Forests, 2004

Although the policy is yet a draft, it contains references to the sector as follows :

Strengthening the capacities of local bodies for segregation, recycling, and reuse of municipal solid wastes, and setting up and operating sanitary landfills, in particular through competitive outsourcing of solid waste management services.

Giving legal recognition to, and strengthen the informal sector systems of collection and recycling of various materials; in particular enhance their access to institutional finance and relevant technologies. The second point is of significance, as it acknowledges their specific role and asks for them to be recognized legally, a new trend in policy.

II. Legislation related to Plastics

If these rules impact the sector through the prism of waste, another set of rules regulating plastics, are also important. Most of these rules came about as a response to public pressure and discussion about plastics, and are in fact, a knee jerk response to the problem.

1. National Plastic Waste Management Task Force Constituted by Ministry of Environment and Forests, Government of India, August 1997

This task force was amongst the first in India to formally examine the issue of plastic waste. It comprised various members from the formal plastic industry and government, but none from the health sector, sectors serving as alternatives to plastics, or civil society. The task force floated the Indian Council for Plastics in the Environment, financed by the plastic industry. This task force referred to wastepickers and their work, but did include the industry responsibility towards the materials, ie, plastics, that it produced. In fact, there was a conscious trend towards pointing fingers at the consumer who littered as the main culprit, overlooking larger responsibilities of the plastic industry for a variety of plastics, many of which would not be even littered.

As a result, there has been a subversion of the idea of Extended Producer Responsibility (EPR). It was seen in hindsight that there was very little attempt to either

mainstream the informal sector or reduce plastics in this landmark task force.

Instead, there was a clear attempt to justify the rampant use of plastics by pointing to the livelihood needs of the sector. In fact, it was from here that many other initiatives came about, seeking a more public and environmentally acceptable face for plastics. These included the now well known initiative to make it mandatory to produce plastic bags that would be three times thicker than the prevalent thickness at that time. The reasons cited were that they would find it economically viable to pick up thicker bags, suiting the needs of both their livelihoods and recycling. Several years later, this has not proved to be true. Another stand taken by the committee has been to claim that wastepickers require incentives for their work. However, in the absence of a broader understanding of how the informal sector works, this has proved to be a futile exercise since none of the basic infrastructure and facility-based needs are even alluded to.



2. Recycled Plastics Manufacture and Usage Rules Ministry of Environment and Forests, Government of India, September 1999

These rules laid out how plastics may be recycled. They offer technical guidelines and draw out some means by which information on the plastic type and recycle amount may be made available. It therefore acknowledges the presence of the informal recycling sector in passing and in order to be implemented, the informal sector, particularly the reprocessors, would have to be formally recognized. However, as this was not done, the rules have not yet been implemented.

3. Ranganath Mishra Committee on Plastic Waste Disposal Ministry of Environment and Forests, Government of India, January 2001

The committee was set up to take the agenda of handling plastic waste with specific reference to its segregation, treatment and disposal. The committee comprised a large section of the plastic industry and some State Pollution Control Boards.

The committee has met several times since and has made various recommendations regarding recycling so far. The most significant ones were:

The plastic industry was to be made responsible to retrieve empty packaging and should be asked to have proper disposal system. The cost of recycling of plastic material could be built into the product. This resulted in a focus on PET bottle collection and recycling by the plastic industry.

Industry should strengthen the network of concerned Industries Associations for promoting waste management and to organize recycling as per BIS norms

However, the rules did not actually involve the informal recycling sector that currently picks up PET bottles and ekes a livelihood from waste picking and dealing. It is also being implemented only very marginally. Other state legislations, such as the Tamil Nadu Plastics Articles (Prohibition of Sale, Storage, Transport and Use) Act, 2002 and various city wide bans on plastic bags have not yet included the complete gamut of plastics and its recycling in their view and are thus lacking in a broader vision of recycling.

III. Legislation directly related to Waste Recyclers' Livelihoods and Social Security:

1. The Unorganized Sector Workers' Bill. Ministry of Labour

This seeks to enable the unorganized sector to access social security such as pension, insurance etc. The Bill names waste pickers as one set of recipients, but does not mention other informal sector recyclers. While the Bill is still not passed, it has been found to be lacking in many ways. The boards for the workers are a centralized board, instead of multiple boards that can better handle a group of similar professions. The funds allocated are inadequate for the sector and that even the welfare measures are not clearly defined and could therefore amount to unsubstantial gains.

2. The Swarna Jayanti Shahri Rojgar Yojna Ministry of Urban Development and Poverty Alleviation.

This scheme offers a good fit to informal sector wastepickers and small waste dealers, as it seeks to empower communities, build community networks and offers several benefits to self employed workers. It is applicable to all urban towns in India and focuses on the urban poor, where it assists in training and setting up of self-employment ventures.

3. Gujarat State Legislation: Here, a government order of 1982 turned over the basket waste in government offices to wastepickers. The chief target group were organized women wastepickers.

4. Maharashtra State Legislation: There has been some state wise legislation on the issue as well. Of these, the order of the Government of Maharashtra; Water Supply and Sanitation Department (Government Circular No: Ghakavya 1001/ Pra. Kra 546/ Papu-22

Mantralaya Mumbai : 5 January, 2002²) is perhaps the most impressive in its understanding of the issue. In brief, it states that :

The unorganized rag pickers (*term used in order*) collecting waste in different parts of the city should be organized with the help of the non-government organizations and register a cooperative. The local self-government should take an initiative to get these cooperatives registered. Registered rag pickers organization should be allotted the work of collecting waste in the city parts/wards with the help of non-government organizations.

While allotting work to these cooperatives to collect waste from various places in the city, the citizens should be informed of this method. Also discussions should be held with non-government organizations, eminent citizens, Mahila Mandals and people's representatives.

Those rag pickers who have not registered in the cooperative, can also be, under exceptional circumstances, allowed to collect waste on an individual basis after registering themselves.

The civic authority should give preference to the cooperatives formed by the rag pickers to collect dry waste.

If the city has a waste processing unit, the waste collected by the rag pickers should be used for the same or the rag pickers should have the freedom to sell it in the market. This will provide income to the rag pickers and help improve their living standard.

Civic authorities / NGOs should issue identification cards to the registered rag pickers. This will enable the citizens to know the registered rag pickers.

The civic authority / NGO should allot a specific place, as per the situation, and give the task to the registered rag pickers or their organizations to collect waste from 250-300 homes.

The task of collecting Bio-Medical waste and polluted/toxic waste should not be allotted to the rag pickers. Civic authorities should make provision for collecting general waste and bio medical waste separately and storing it and disposing it and monitor it effectively.

IV. Masterplans

While the Masterplans of various urban cities allocate space for essential activities, there has been no space allocated for waste recycling through its many components: segregation, sorting, storage, transportation. As a result, these activities are carried out by wastepickers, waste dealers and traders without the authorized land use and are deemed illegal.

In summary, it is clear that many policies and legislation in India mention recycling but fail to address it through the activities of the informal sector. Where it is mentioned, it is geared towards meeting a few needs of the wastepickers, rather than other sections of the waste recycling chain.

The Philippines

Legislation on segregation and waste recycling and management in the Philippines has been preceded by the well known Payatas catastrophe of July 2000, where an avalanche of garbage in Quezon City resulted in the death of several wastepickers. Now, a similar threat can be seen at Smokey Mountain, another large waste dumpsite, where many wastepickers have organized themselves to find alternatives to such a potential crisis. Such situations serve as a grim reminder that long term solutions to the garbage problem are urgently needed.



At this time in 2000, there was already another piece of legislation in place which also impacted waste handling. This was the Philippine Clean Air Act of 1999

(RA 8749). Under Section 20 of RA 8749, incineration of "municipal, biomedical and hazardous waste", was banned. As a reaction to the garbage avalanche, and based upon existing awareness about the problems related to burning of waste, the Ecological Solid Waste Management Act (RA 9003) was passed to fully address the issue of solid waste. This is the central, comprehensive act upon which waste handling is based today.

Here below is an analysis of this and other legislation that impacts the waste recycling chain in the Philippines:

NATIONAL LEVEL LEGISLATION

1. The Philippine Clean Air Act of 1999 (RA 8749)

Apart from being the precursor of the Ecological Solid Waste Management Act (RA 9003), the Philippines Clean Air Act of 1999 (RA 8749) is important in itself because it banned the incineration of waste. In this it also opened the door for greater discussion and dependence of alternative models of waste handling, through non-burn systems. The Act simultaneously suggested the underlying hazardous nature of waste. As a positive fallout, the Act offered a possible protection of the wastepickers, who would lose their livelihoods had recyclables like plastics and paper, most suitable for incineration, actually been handled in this manner.

Ecological Solid Waste Management Act (RA 9003)

The Ecological Solid Waste Management Act (RA 9003) is a comprehensive, holistic legislation, passed to address the issue of solid waste, which currently poses a huge problem in the Philippines (see country report) . The salient features of RA 9003 are:

Institutionalization of comprehensive, ecological and systematic waste management strategies.

Target setting for waste volume reduction through resource conservation, maximum utilization of resources and waste recovery.

Decentralization of waste management responsibilities to the Barangay (a single community level unit) and end encourage greater public participation in decision-making, planning and implementation of waste management strategies in their communities. Strengthening the policy banning waste incineration as an option for waste management.

While this law emphasized the importance of waste reduction and recycling, it still did not recognize the wastepickers/scavengers, who have been traditionally involved in waste recovery and recycling.

This is one of the main reasons why many wastepickers are concerned with the full implementation of the Ecological Solid Waste Management Act. They believe it is a threat to their livelihood as the waste management system no longer supports centralized waste disposal facilities that allows scavenging. This should be seen in the working of the wastepickers, who are actually involved in retrieving precious materials from a centralized system rather than actually moving from point to point in the city. This concern about loss of livelihoods was repeatedly voiced on various occasions during conversations with them in the course of the research.

If the wastepickers are worried of the full implementation of RA 9003, their fears are not without basis. There are provisions in this Act that limit or even prevent them from accessing waste, curtailing their means to survive. In the IRR of RA 9003, the provision on Minimum Requirements for Segregation and Volume Reduction states:

"No scavenging or unauthorized collection in designated segregation containers or areas shall be allowed."ⁱⁱⁱ *In controlled dumps, "controlled waste picking and trading", is possible and only "if allowed by owner / operator"*ⁱⁱⁱⁱ. *Section 48, paragraph 7 of the Act states that "Unauthorized removal of recyclable material intended for collection by authorized persons" is a prohibited act and carries a penalty of a fine of not less than three hundred pesos (5.36 USD) but not more than one thousand pesos (17.86 USD) or imprisonment of not less than one (1) day to not more than fifteen (15) days, or both.* (Section 49).

Therefore access to waste sites by wastepickers is dependant on getting permission from the owner or operator of the controlled dump. If the wastepicker insists on her/his right to access such waste without permission, then the wastepicker can be made criminally

liable. Furthermore as the controlled dumps are to close by the end of 2006, all wastepicking could end with their closure. Already, waste picking within the city is not encouraged.

RA 9003 is touted to be revolutionary in certain respects, yet, there exists a glaring gap in the law. The entire informal recycling sector that plays a significant role in waste diversion, recovery and recycling, has been left out. Nowhere in the law are the wastepickers / scavengers defined, described or mentioned. Consequently, very little attention is given them in terms of providing services and livelihood opportunities.

On the other hand, in its Implementing Rules and Regulations (IRR), one of the functions of the National Solid Waste Commission, the body that oversees the implementation of solid waste management plans is to " ... develop safety nets and alternative livelihood programs for small recyclers and other sectors that will be affected as a result of the construction and/or operation of a solid waste management recycling plant or facility"^{iv}. It is unclear who comprises the "affected sector" because the "small recyclers" could include them but does not also necessarily exclude other bigger players (i.e. big junkshop operators, recyclers, factories, etc). The language used even dismisses them as a mere "sector that will be affected", thus reflecting the level of insignificance that society assigns to them without bothering to identify them.

While Smokey Mountain's wastepickers see the wisdom of having a law that addresses the garbage problem, they too have fears of the impacts of its implementation on their livelihoods. Most of them were born near or have lived most of their lives in Smokey Mountain. Wastepicking is the only means of livelihood that many of them know. The National Solid Waste Commission admits it has not yet discussed alternative livelihoods on the law's third year of implementation.^v

Members of the National Solid Waste Commission include:

- a. Department of Environment and Natural Resources (DENR);
- b. Department of Interior and Local Government (DILG);
- c. Department of Science and Technology (DOST);
- d. Department of Public Works and Highways (DPWH);
- e. Department of Health (DOH);
- f. Department of Trade and Industry (DTI);
- g. Department of Agriculture (DA);
- h. Metro Manila Development Authority (MMDA);
- i. League of Provinces of the Philippines (LPP);
- j. League of Cities of the Philippines (LCP);
- k. League of Municipalities of the Philippines (LMP);
- l. Liga ng Mga Barangay;
- m. Technical Education and Skills Development Authority (TESDA); and
- n. Philippine Information Agency (PIA).

The private sectors are to be represented by the following:

- a. A representative from non-government organizations (NGOs) whose principal purpose is to promote recycling and the protection of air and water quality;
- b. A representative from the recycling industry; and
- c. a representative from the manufacturing or packaging industry

Because the role of the wastepickers in waste management in particular, and their role in society in general is not recognized in RA 9003, it is but logical that they are not accorded protection from physical and financial displacement. There is no provision in the Act that addresses the plight of the scavengers when the law is fully implemented. The authors of the Philippines Environment Monitor 2001 recommend that the issues of scavengers and poor communities be addressed in order to achieve the goals of RA 9003.

There have been accounts when some of the itinerant wastepickers have been arrested for allegedly violating anti-littering laws. There have been cases where some wastepickers are imprisoned without charges and eventually released. It is likely that the levels of harassment will increase with the full implementation of RA 9003, now that there are possible legal bases for arrest by mere act of wastepicking.

On the other hand, it is useful to note that waste traders are given licenses to undertake their work of operating junk shops and are therefore, able to carry out their work legally. While this is indeed a good step, it is also incomplete, as the waste, essential for the traders' operation, is not accorded the same legitimacy.

OTHER ACTS

Most of the relevant local acts here are related to labour protection and are clearly inclusive of wastepickers, often termed as scavengers.

Local Government Code (RA 7160)

There also exists the Local Government Code (RA 7160) which mandates the municipal government to provide basic services and facilities, and social welfare. The social welfare services include "programs and projects on child and youth welfare, family and community welfare, women's welfare, welfare of the elderly and disabled persons; community-based rehabilitation programs for vagrants, beggars, street children, scavengers, juvenile delinquents, and victims of drug abuse; livelihood and other pro-poor projects; nutrition services; and family planning services..."^{viii}. Since they are also mandated to develop systems and facilities for solid waste management under the same law, the local government unit should be responsible to ensure that the wastepickers displaced by the closure of the open and controlled dumps^{ix} are mobilized for the establishment of Materials Recovery Facilities (see chapter 2 for more details) and other waste management systems.

Other Labour Laws

There are also a number of labor laws that are intended to provide protection to the informal sector. These are **Articles 154 & 155, Rule XIX, Book III of the Implementing Rules**. Specifically, **Article 155 of the Labor Code** directs the Secretary of Labor to regulate employment of industrial homeworkers.

Laws also exist which are aimed at protecting children. The Presidential Decree 442 amended Presidential Decree 148, the Labour Code of the Philippines which raises the age limit of industrial child workers from 14

to 15 years old. This is in accordance with the International Labour Organization's Convention No. 59 which sets the age limit for children working in the industrial sector at 15 years old.

Republic Act 7658 prohibits the employment of children below 15 years of age except when the child works in public entertainment or information, or "when the child works directly under the sole responsibility of his/her parents or legal guardians who employ his/her family only: provided, however, that the employment does not endanger the child's life, safety, health and morals and does not impair his/her normal development, and that the parent or legal guardian shall provide the said child with the prescribed primary and/or secondary education...". Republic Act 7610, the main child protection law of the Philippines.

We see that on the one hand, it has strict provisions for the protection of children in abusive and other difficult situations. On the other hand, it legalized child labour, even those under 15 years of age provided that permission was granted by their parents or legal guardians.

This has repercussions for wastepicking as children can continue undertaking what is clearly a hazardous occupation legally, using a loophole in the law. Many children actually prefer wastepicking to going to school as they enjoy the attendant economic independence.

It is therefore clear that while there is some comprehensive legislation in place to handle waste, sometimes even with the marginal aim of helping waste recyclers, this does not reach the desired levels.

Cambodia

Legislation and policy is still being developed in Cambodia. Due to this fluid situation, although Phnom Penh generates almost 750 tons of waste per day, of which 80% is organic, it does not have any plans for waste management. There is however a master plan for waste management to be developed by Japanese International Cooperation Agency (JICA) for the city.

For the rest of the country, the Governor of each province is responsible for the management of waste.

EXISTING LEGISLATION

Cambodia does have in place sub-decree Prakas 2003, or a sub-decree on solid waste management, from 1993. It was approved by the Kingdom of Cambodia in July 1994 and the Ministers' Council in 1999. The sub-decree provides that if there are any other provisions contradicting this sub-decree, they are void.

The aim of this sub-decree is to regulate solid waste to ensure the protection of human health and the conservation of bio-diversity. It applies to all activities related to the disposal, storage, collection, transportation, recycling and dumping of garbage and hazardous waste. Although the Ministry of Environment is responsible

for developing waste management guidelines, there have been no guidelines established so far. The law also states that the local authorities are responsible for the management of waste, though outside Phnom Penh there is no waste management system established so far.



The sub-decree is to establish guidelines for the management, including recycling and minimization of household waste. This, however was a practice being followed in Phnom Penh prior to CINTRI (a private Canadian company) taking over the waste management in the city.

Furthermore, those found guilty of violating this sub-decree are to be penalized for its violation. Equally the neglect of duty by the inspection officials or agents is subject to a fine.

For hazardous waste, the generator of the waste is responsible for its temporary storage. Quarterly reports also need to be given to the Ministry on its management at their premises. Hazardous waste is also to be disposed separately and not with the rest of waste. The law also bans the import of hazardous waste, although there is little data available on this. Equally, the Ministry is responsible for sampling of any hazardous waste created in the country as a part of its monitoring activities. The law speaks of the need for proper storage, transport and disposal of hazardous waste but there is no proper management of it and the hazardous waste is disposed in open dumps.

The producer of the waste is to pay a fee to the Ministry of Environment and the Ministry of Economic Affairs and Finance for the testing of waste samples. This fee is incorporated into the national budget for allocating to the Environmental Endowment Fund.

PROPOSED LEGISLATION

The deteriorating waste situation has also pressurized the authorities to create other more comprehensive legislations to handle waste. On the anvil is a master plan for waste. Under this, waste will be segregated

at source. Besides, the master plan is to focus on the involvement of the community in the management of waste. This will include a public awareness program on waste management at the house, stopping littering on the road and on the need for punctual timings for waste disposal.^{ix} As yet the training on waste segregation is still to be started and will be accompanied with an awareness program through posters and community meetings. In order to do this they will involve the local zone of the city of Phnom Penh.

It is therefore possible to say that although it is obvious that there is extensive legislation for the management of waste in Cambodia, the fact is that there is little awareness about these laws, their provisions and potential. Regulation, too, then becomes difficult. In fact the lack of implementation of this law due to the lack of awareness of its existence, means that most waste is disposed in a straightforward manner by being dumped at a landfill.

Currently, another concern has been the incomplete nature of the legislation. It does not mandate segregation with the emphasis that is required, so that the process of recycling is impeded. Another concern has been that the sub-decree does not include the informal sector despite the demonstrated possibilities in Cambodia of working with it in managing waste.

Waste related INTERVENTIONS by various actors

A comparative summary

The range of interventions in these three countries offers a diverse pool of practices. Within civil society players, there is the common goal of creating safer jobs of wastepickers. Above this is the overarching, broader goal of shifting the terms of work of any wastepicker, from this current occupation to a recognized professional offering services required in a rapidly urbanized world.

Safer, cleaner work is currently approached through many avenues: direct waste collection, recognition of work and hence, reduced harassment and freer work conditions and occupations that do not involve the activity of picking up waste from dumpsites.

It emerges that service delivery by wastepickers is one of the most viable options in the three countries. This can range from waste collection from door to door, to cleaning and other kinds of contracts. The survival test in each case here lies whether or not the urban local body or municipality formally accepts the service. Across the spectrum, we find that where it is not recognized, the waste pickers are treated as invisible persons, whose work is easily substituted by larger, private players with more marketing experience and capital.

Hence, any intervention must be accompanied by rigorous advocacy for formal recognition. In this respect, many innovative approaches have been seen from local urban bodies and municipalities, through schemes like issuing identity cards, as in the case of India.

Another aspect is the common intervention in educating and enabling children to stop this work. This reflects both the broader social recognition of the work as hazardous and the concern about child labour. Perhaps this step will finally see many less children working as wastepickers and a generational shift away from such an occupation.

It is striking to see how little attention has been paid to small waste dealers and itinerant waste buyers. For the former, there were only two examples of interventions undertaken. These were from India and The Philippines. This leads to the question of framing of the waste trade chain itself as a service provider to any city. While wastepickers are amongst the most marginalized in all the three countries, they are linked to the waste traders as part of a longer chain. In some

interventions, wastepickers become the waste traders as a cooperative. Many kinds of wastes enter the chain only through waste traders. While conventional wisdom has it that small waste traders are exploitative of wastepickers and pay them less, it also has to be taken into account that the work of waste traders can only be rationalized if they too, are formally recognized. Moreover, they too face some of the working hazards experienced by wastepickers, such as lack of space, harassment by civic authorities, loss of jobs when large private persons are contracted and acquire rights over waste, apart from health concerns borne out of contact with toxic materials and its recovery. It is also important therefore, to reconsider the approach towards this level of the informal recycling sector throughout the region we have studied, integrating them and formalizing them in order to actually recycle under optimal conditions.

India

In the context of waste handling, the informal sector has been primary seen as one comprising wastepickers alone. Within this, their work has been mainly seen through the prism of waste management at the pre-dumpsite level. As a result, we find that most of the interventions in India have focused on training wastepickers to undertake door-to-door waste collection from households and on occasion, to compost organic waste. Additional aspects of such activities include some training to the wastepickers about waste and health, enabling greater savings and including the persons in formal community based framework.

However, such a narrow approach is incomplete. For example, it does not ensure any responsibility for waste handling on part of the generator, but only focuses on its disposal. Also, despite several such pilot projects across India, there is still little proper segregation of waste, or adequate awareness of important issues to create public pressure on issues like removing toxic wastes from the waste stream or enhancing the recycling chain. This approach has also resulted in isolating from the existing, formal, mainstream framework a variety of other players involved in the recycling chain, such as waste buyers, small traders, not to mention wastepickers and itinerant buyers.

Besides, the impact of the above projects has been limited only till the level of the dhalao, or local bin at best. In this sense, the work is reduced to a

community based garbage clearing project, without taking into account the waste stream and its various inter phases beyond this. The assumption is that if the community is clean, there is little else that should be taken into consideration. In a broader sense, this is linked with the general trend towards beautification of cities, where removal of the unaesthetic is central. In India, this approach has caught the fancy of communities, municipalities, policy makers and even donor agencies. As a result, many newer initiatives actually treat community based door-to-door waste collection as an end in itself, rather than only a component of a larger intervention.

However, it is also true that the door-to-door collection of waste focus provides opportunity to be used as a tool in ensuring greater responsibility for both waste recyclers as well as wastepickers and others lower down in the chain to participate in a formally recognized way while simultaneously asserting their rights over recyclable portion of the waste. It is important to distinguish between these two kinds of approaches to take the issue to sustainable approaches.

It will be useful to understand a cross section of interventions made by various agencies as outlined below.

URBAN LOCAL BODY LED INTERVENTIONS

There are three trends seen amongst proactive Urban Local Bodies (ULBs):

- to organize door to door waste collection themselves.
- to formally allow and encourage other agencies to undertake this work.
- to provide incentives to undertake the work through provision of capital costs or equipment and encouraging the informal sector.

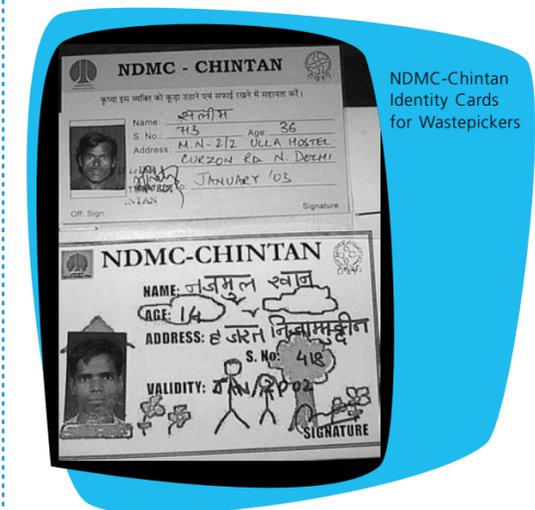
Amongst those ULBs who have taken initiatives to organize door to door collection on their own are those of Suryapet in Andhra Pradesh, Namakkal in Tamilnadu and Panjim in Goa, which have organized nearly 100% door to door collection and some segregation. In the absence of any clearly defined wastepickers, various other workers have been employed, leading to the concern that existing wastepickers would have been displaced.

In Vishakhapatnam and Hyderabad, in Andhra Pradesh in South India, the ULB provided tricycles to those selected organizations or contractors who had tied up with various waste generators for this work. In the case of Green Cross Exnora, the horticulture department agreed to buy 25% of the compost produced, thereby potentially opening up the space for increased earning for wastepickers. In Delhi, the Bhagidari (Partnership) scheme initiated by the Chief Minister also provides for cycle rickshaws for door-to-door collection by organized communities, apart from trainings to waste generators. However, such steps can only have an impact if wastepickers were part of the initiative in the first place.

In some cases, there has been no direct incentive provided by the ULBs, but granting permission to do door-to-door collection has itself acted as an incentive by itself.

However, in none of these is there any inherent inclusion of the informal sector. One exception has been the New Delhi Municipal Council (NDMC), which has undertaken a mixture of the three types of door-to-door waste collection. It has consistently attempted to integrate wastepickers in the work, with the aim of facilitating their shift into the formal sector. In the last year, the Municipal Council of Delhi (MCD) has also consciously stressed on the involvement of existing workers and wastepickers in its various schemes involving privatization of door-to-door waste collectors.

The NDMC has also endorsed identity cards for wastepickers and itinerant buyers, thereby showing one way by which they can be acknowledged. Others who have either endorsed or issued identity cards are the ULBs from several other parts of India: Thane, Vajjalnagar, in Ahmedabad, Pune, Nasik, Vellore, Ahmednagar, Kalyani, Bhadreshwar and Kancharpara.



NDMC-Chintan Identity Cards for Wastepickers

The non-inclusion of wastepickers in door-to-door waste collection, either by private operators or by the ULB itself, has already resulted in displaced urban poor. Complaints of being thrown out by private operators have been heard in the cities of Chennai, Surat and Nasik already.

There are clear benefits for ULBs to promote such waste handling. These include:

Economic Benefits

Almost 70 to 80% saving in secondary transportation for the municipalities.

Saving in landfill space for the municipalities.

Greater compliance with legal requirements.

Improved appearance of communities where this is being done, reducing the pressure on the ULB.

Possible enhanced income or savings from compost.

NON GOVERNMENT ORGANIZATIONS' INTERVENTIONS

There are various kinds of interventions made by civil society groups, with a number of objectives and approaches.

The Clean Community Model

Many have as their focus Solid Waste Management, with its multiple arms at the community level. These organizations include Exnora (an acronym derived from Excellent, Innovative and Radical) and the Centre for Environmental Education (CEE). While Exnora has been training workers to undertake waste handling, CEE has focused on the systems. Both work largely at the community level, of which wastepickers are a part, though not necessarily a part of their schemes. Exnora has set up multiple stand alone initiatives that are now taken up by volunteers and other trained persons with a multiplier effect.

These were undertaken within the cleanliness paradigm, described above. Subsequently, they have resulted in other social benefits like livelihood opportunities and on occasion, better and safer condition of work for the wastepickers. The intervention mainly includes door-to-door collection and when the municipality provides the land, composting of wet waste.



However, it must be noted that in these systems, waste recyclers are not the central concern, and they can be replaced with other unemployed persons without disrupting the envisioned model.

In many parts of the country waste pickers are also being 'adopted', (terminology used by the communities themselves) by the waste generators where they were working. These include Jubilee Hills in Hyderabad, South India, Defence Colony and Princess Park, New Delhi. This ranged from giving them a place to stay, teaching them composting and providing them with other benefits, from a paternalistic framework. These steps are important because they point to acceptance of the importance of wastepickers in city life.

Service Provision

Many agencies have been working as service providers for door to door collection and awareness. These include Center for Development Communication (CDC) in Jaipur,

Janchaitnya (Translation : People's Awakening) in Vishakhapattanam, Muskan Jyoti (translation : The light of a smile) in Lucknow. Their own focus is to earn revenues through the provision of a service for which there is a demand. The main services include waste collection from households, street sweeping, and cleaning drains. CDC, for example, serves in 5 cities as an awareness generation and collection agency, operating between the waste generator and the municipality. Muskan Jyoti followed a similar approach, but it make a conscious effort to work with wastepickers. In Jharkhand, the Nav Bharat Jagaran Kendra (translation: The Centre for a New Indian Awakening) also follows a similar approach.

In this work, the informal sector can both benefit and be badly hurt. When service providers do not or are not able to identify, train and communicate with wastepickers, they are unable to absorb them. As this is a specialized skill, it is possible that many wastepickers are marginalized in this process. Besides, the existing chain of waste recycling, that includes itinerant buyers, waste dealers and the labour they work with, stands fractured when the service provider lays claim to the recyclable waste and sells it directly to the reprocessor or biggest dealer.

On the other hand, when service providers are able to involve these, there is a possibility of actually making the working lives of the identified wastepickers more secure, depending on the service provider. The other shortcomings discussed usually remain valid, as the do not fall into the service provider's objectives.

Building the Capacity of Waste Recyclers

The third and least widespread aspect of work with waste recyclers has been to build their capacity to assert their rights in the public sphere.

The perspective here is hinged upon the need for recognition for the sector from ULBs and other government agencies, a right to recyclable waste regardless of new systems of waste handling and building the capacity of the sector to represent itself, as it were.

However, there are also differences in the approach.

Chintan (translation : an alternate perception) in Delhi follows a core idea that recycling cannot be considered a green activity unless the recyclers at every level are recognized, provided for and able to work under safer circumstances. While it believes that waste recyclers require an entrepreneurial and service delivery approach to their work, it believed that this must be backed up by a wider social and political support for their work.

It has been working to organize wastepickers, itinerant waste buyers and in a different manner, even small waste traders. They have been given short duration Identity Cards recognized by both the municipality and the police, which are renewed every 6 months and noticeably reduce harassment of various kinds. The area groups then agglomerate to form larger zone level groups. This is formed as an association of wastepickers. Association members pay 50 cents annually, used towards the cost of identity cards. They access

workshops to help them learn about many issues, as considered relevant by consensus: waste, rules related to these, legal literacy to deal with various situations arising out of dealings with the police, toxics, health, communication, savings, service delivery and presentation and leadership, to name some. Groups also identify livelihood opportunities, which are jointly followed up with Chintan. Those working on formal service delivery programmes are covered by PF, ESI and other provisions for social security. Others are now being brought under the ambit of group insurance. There are also initiatives to link them with other larger issues of the city, with other organizations and forming a network of city-wide wastepickers themselves.

A similar association, called the Harit Recycling Association (HRA), has been created with small waste buyers, with a focus on advocacy for formal recognition of their work. The current work of the HRA includes building up pressure for being included on the Masterplan, currently being finalized. This inclusion is seen as important because of the working of informal sector. Cooperatives of women are also being formed, though these have had a slow start in that the act itself has been changed and this has delayed the process itself. The objective of these is to enable such women to turn opportunities for waste handling into larger opportunities for group entrepreneurship.

Other partnerships with the waste recyclers includes ground level problem solving, particularly with civic agencies and a hostile public and running bridge classes for children wastepickers, to enable them to bridge gaps and join schools or take exams from the National Open School, if possible, or get an education adequate to skill themselves in other safer professions of choice. On its own, Chintan also undertakes studies and research to understand other complex areas in this area better. All findings are converted into visual charts to share with the informal sector. They are also used as an advocacy tool by Chintan. In all, Chintan's programmes impact just under 10,000 persons.



Stree Mukti Sangathan's (translation: Organization for the Emancipation of Women) is a 30 year old organization in Mumbai which has its roots in working with women at the grassroots. Its work with wastepickers is relatively recent and it has worked on women's issues at various levels. Specifically, it has created cooperatives with wastepickers, organizing them to work as groups, and enable them to hold savings. This last is perhaps the most important for wastepicker women who otherwise do not have other formal avenues for savings and are left vulnerable. SMM has also initiated policies like group insurance for the women. SMM's linkage with the Municipality has been through services provided by them in the Advance Locality Management (of waste) programme. SMM has also succeeded in ensuring that the wastepicker women are officially included in the enumeration of persons living below the poverty line by the local government, thereby at once making them eligible for several specific opportunities.

In Bangalore, where one of the oldest initiatives with wastepickers was initiated, many systems of integrating wastepickers with the waste handling needs of the city have been demonstrated over the years by Waste Wise and Mythri, both organizations that complement each other and function under the same umbrella. Waste Wise offers services and Mythri offers other social support for wastepickers.

A similar approach to SMM has been undertaken by Kagad Katchh Patra Kashkari Panchayat (translation: Paper, Glass, Metal Workers forum/union) in Pune, with a specific emphasis on appx. 5000 women. The initiative began as the SNTD University's adult education initiative, but it positions education in a broader framework, through solid waste management with wastepicker livelihood as a core concern. Here, the women have been formed into a union that the ULB recognizes. One of the important outcomes of the work here has been in investment in the wastepickers by the municipality, as a direct consequence of their recognition of the savings incurred by the wastepickers' work. These include a medical insurance. It is not enough to view this medical insurance in terms of relief during a medical emergency, but more importantly, as a means by which the state has undertaken to legitimize the presence of these workers.

Unlike Chintan, Kagad Katchh Patra Kashkari Panchayat does not work with waste traders, though it does with itinerant waste buyers. In Maharashtra, initiatives like this and Stree Mukti Sangathan have collaborated with empathetic municipal officials and a progressive policy that enables their work to actually move ahead with less obstruction. However, without such demonstrated possibilities on the ground, and the clear need for such policy, it is unlikely that these policies would have been undertaken in the first place, suggesting a two way process.

There are other emerging initiatives as well : In Indore, Jan Vikas (translation: People's Progress) has also organized wastepicker women to make self help groups and to innovatively multiply their wealth. In Surat, Nav Sarjan has made a cooperative of wastepicker women who run their own scrap shop and share the profits

as bonus. In Ahmedabad, the Self Employed Women's Association (SEWA) has enabled almost 300 women who have formed a co-operative, to undertake door-to-door waste collection in several hundred households. This is backstopped by the many opportunities available through being organized as a cooperative with SEWA.

All these programmes have used the opportunities created by the increasing wastes generated and the demand for handling these. SMM in Mumbai has been able to dovetail into the ALM scheme, providing trained personnel for services in many wards. The KKKPKP is also using the opportunity presented by mandatory door-to-door waste handling. Chintan has also a wing that offers services related to waste handling. It is already undertaking door to door waste collection in over 20,000 units and has also been providing professional housekeeping and waste handling services to various agencies, hotels, plazas etc, through formal, legally binding agreements with various agencies. In all three organizations, it is wastepickers who are given the training and task of implementing the work. Unlike many other organizations, in these models, the dry waste is also treated as a source of revenue of the wastepickers, thereby acknowledging their rights over such waste.

It is expected that by undertaking waste handling with this approach, not only are enhanced livelihood opportunities being created, but more importantly, a vital service providing sector is moving closer to formal recognition and hence, safer work. Where the municipalities are participating in the effort, it becomes closer to being a partnership in responsible waste handling.

Nonetheless, interventions in door-to-door waste handling undertaken in the absence of a stated policy that protects the rights of the wastepickers do not offer a stable solution in the long run.

The Philippines

A number of interventions have been undertaken in the Philippines for the management of waste. These include initiatives taken by the government and various private and community groups. Some of these have taken into account the wastepickers in a number of ways, with a few even aimed at their enhanced livelihoods. However, in the context of the existing legislation, most initiatives are actually aimed at creating near zero waste models locally.

Here below are a few initiatives that showcase the range of work being undertaken in the Philippines :

GOVERNMENT INITIATIVES

Materials Recovery Facility

A Materials Recovery Facility (MRF) is a system, which includes multiple components that together reduce waste and optimally use it. A typical MRF comprises an area that will receive segregated waste on a regular basis. It will be equipped to compost the wet, organic

waste and stack the dry, recyclable waste, to be sent later for recycling. With the closure of the open and controlled dumps, Materials Recovery Facilities (MRFs) are expected to be established widely. Already, these are proving to be viable alternatives to the original, unhealthy, stinking dumps and have begun to provide cleaner employment to the wastepickers.

One such MRF has already been established for the recyclables in the Smokey Mountain area, by the government. The Smokey Mountain Resource Recovery System (SMRRS) complain that although the MRF was inaugurated in 2001, the funding to operate it has yet to be released. Therefore, the MRF is not yet operational. Besides, an injunction has been slapped on the MRF following a complaint by Makro warehouse supermarket based on fears that its operations would cause pile-ups of garbage and create a foul smell similar to ordinary open waste dumps. This could also be the result of the innovative and new nature of the intervention, which is not clearly seen and appreciated.

However, given the nature of the system itself, it is an intervention with great potential for the wastepickers.

Other government interventions

Many organizations and government agencies with different projects intended to assist the wastepickers have come and gone. The Helping Foundation of former President Fidel V. Ramos and chaired by former First Lady, Amelita Ramos are examples of government and private organizations that have supported some of the projects. Many have been unsuccessful because in these cases the interventions did not involve consultations with the wastepickers themselves and thus imposed impractical ideas. Fund-driven organizations have also developed projects for the community but these were not sustained after the funding ran out. In the end, overall, some interventions were not able to have a significant impact on the wastepickers.

At the national level, there are also interventions that are aimed at uplifting the conditions of the poor in general. The Comprehensive Integrated Delivery of Social Services (CIDSS) is a programme of the Department of Social Welfare and Development under the Social Reform Agenda. It provides assistance to those in the informal sector including the waste pickers. KALAHI-CIDSS is the "flagship poverty alleviation program" of the Philippine government and is aimed at allowing active participation of communities in planning and making decisions about the policies and direction of their community¹. The implementation period of this project is between 2003 and 2008. Under the CIDSS self-assistance component, seed capital of about PHP 292 million had already benefited 77,470 individuals by 1997. Beneficiaries included women, scavengers, out-of-school youth, street children, persons with disabilities, poor families, single parents, unemployed and senior citizens.

The more controversial of the interventions in Smokey Mountain is the flagship project of the Ramos Administration. The project aims to:
 (1) provide housing for the Smokey Mountain residents, supposedly all wastepickers;
 (2) clear Smokey Mountain of the waste and develop the area into a residential and livelihood

center for the residents in the area and (3) reclaim and develop Manila Bay into a commercial and industrial complex and port¹¹.

The wastepickers claim not all who benefited from the project are listed beneficiaries. To date, part of the old Smokey Mountain dump still exists. The City of Manila claims this is the responsibility of the National Government who in turn says, there is no money to clean up the site. The real benefits of this project yet remain to be seen.

NON GOVERNMENT INTERVENTIONS

Helping the Wastepickers Help Themselves: Smokey Mountain Resource Recovery System

Various groups including church, private organizations and non-government organizations have worked with the wastepickers at different points in their 50-year history as a community. One initiative is the establishment of the Smokey Mountain Resource Recovery System (SMRRS) and the SMP Multi-purpose Cooperative by the parish. One of the aims of the program is to provide additional options for livelihood while advocating for on-site development. Today, the cooperative, mobilizing mostly wastepickers, have units for handicraft-making, composting, and production of ornamental plants aside from its other programs aimed at uplifting their social conditions and spirituality. To date, the challenge for SMRRS is how to make their livelihood projects sustainable.



Handicraft-making

Fr. Benigno P. Beltran, Smokey Mountain's parish priest for more than two decades now, mobilized women from the community, trained them in making bags out of old newspapers, directories and other used paper. Bag-making started in 2002 following the training of 75 people in 2001¹¹. There is still no regular market for these bags but the cooperative is negotiating with different department stores for consignment arrangements. At present, production of bags is being done on a per order basis.

In 2003, the SMRRS worked out an arrangement with Totale Corporation, an oil subsidiary of Elf Aquitaine, where the company would provide scholarship grants to 4 vocational students per year starting 2003. The students later on hold their internships at the corporation. In addition, Totale and would allow SMRRS

to display and sell bags on consignment basis at all Totale gas stations in Metro Manila. Women earn an average of 3.5 US dollars per day.

Composting and Production of Ornamental Plants

SMRRS runs a composting facility that can process 2 tons of biodegradable waste per day. The 10 horsepower (HP) shredder has a 20 ton capacity per day. At present, the bioreactor is only processing 500 kilograms of compostables and is solely sourced from the community's biodegradable wastes. They also have a hammermill, a sifter and compost pelletizer. They still do not have a regular market. However, farmers from the nearby Bulacan province already buy compost from them at a price of 0.05 USD per kilogram. The group is also working out an agreement with the Manila City Hall for SMRRS to collect the biodegradable leftovers from vegetable recycling to process into compost¹².



Women in Smokey Mountain have also developed an ornamental plant nursery near the composting facility. They peddle ornamentals and fruit tree seedlings around the City of Manila in pushcarts or and earn an average of about 9 US dollars per day¹³.

While the workers in the informal sector have representation in the National Anti-Poverty Commission (NAPC)¹⁴, it is doubtful whether the wastepickers are able to even voice their opinions or their issues. For the past years, it has been through the auspices of the Catholic Church that Smokey Mountain residents were able to voice their concerns. With the development of the SMP Multi-purpose Cooperative, some of the former wastepickers are opening up and participating more and more in planning and making decisions for the future of their community.

As far as Smokey Mountain is concerned, the establishment of SMRRS is worth emulating. While it is far from perfect and has a long way to go from attaining sustainability, it is a good start in the effort to divert waste from the dumps. The SMRRS staff used to work as wastepickers. At the moment they have 8 regularly paid staff including 2 eco-aides, 1 truck driver assistant, 1 driver, and 1 operator for the composting facility. They also have a cooperative that handles the business side of the alternative livelihood and other sustainability programmes.

Other Wastepicker Targeted Interventions

Mithing Pangarap Educational Foundation, is an NGO that has worked with Smokey Mountain's waste pickers since 1988^{vii}. The organization has programs that work with the out-of-school youth and pre-schoolers. The program for the out-of-school youth is designed to allow them re-entry into formal education. The program also offers skills training for those who want to work in different industries. An important part of their work is a feeding program for its students consisting of rice and vegetables and native food products and no processed food. Finally, the foundation has a scholarship program which currently serves 3 high school students and 2 college students. For high school scholars, the foundation pays for tuition fees, school materials and allowances. For college scholars, they only provide for tuition fees and school materials and books.

SABANA is a project of the Educational Research and Development Assistance (ERDA) Foundation^{viii}. It stands for Sanayan ng mga Batang Nananambakan (in English, Learning Program for Child Wastepickers) and is aimed at helping wean child wastepickers in Smokey Mountain away from scavenging. It also provides opportunities for them to access education and re-enter formal education for drop-outs. Their programs include:

- (1) Learn and Earn: A program that supports school activities and provides, as well, an income through crafts making;
- (2) Health and Nutrition program;
- (3) Capability Building and Organizing via training;
- (4) Network Building;
- (5) Job Placement and Development;
- (6) People's Livelihood Multi-purpose Cooperative;
- (7) Garments and Bags Production for parents; and
- (8) Advocacy on the rights of children, environment, governance, etc.



Linis Ganda Cooperatives

One example of a successful solid waste cooperative is that of the Linis Ganda Multipurpose Cooperative. Linis Ganda is a federation of 17 cooperatives, 1 cooperative each per city or municipality. The Linis Ganda cooperative has its own eco-aides or pushcart waste collectors. Each morning these eco-aides are

given 300 pesos (5.36 USD)^{ix} for buying waste from households. They then sell to Linis Ganda-accredited junkshops. At the end of the day, the eco-aide earns a net profit of 3.57 USD at the very least. After a week or when specific discards can already fill one truck, then the junkshop operator sells the waste to the factory. According to Linis Ganda, eco-aides who collect from middle-income villages usually net 300 pesos (5.36 USD) per day while those who collect from rich villages net about a thousand pesos (17.86 USD)^x. On average, the junkshop operator earns about 20,000 to 50,000 pesos a month (357.14 to 892.86 USD).

Linis Ganda has a different approach from all other organizations, because it works primarily with junk dealers. There are reportedly 1500 officially registered junkshops in Metro Manila. As a cooperative of junkshops, Linis Ganda takes care of its member junkshop operators and eco-aides^{xi}, or people who actually undertake the cleaning work. The eco-aides shoulders half of the 210-peso a month, half of which will be shouldered by the junkshop operators themselves and the other half by the eco-aides. The cooperative is also looking at BLISS for housing support. The federation is able to avail of loans. They have already been granted a 10 million dollar loan from the Land Bank of the Philippines and some from the Countrywide Development Fund of former Senator Gregorio Honasan.

In the year 2002, Linis Ganda was able to divert 182,051 metric tons of waste (2%) from the waste stream countrywide and 8% from Metro Manila's waste stream^{xii}. Ms. Camacho claims about 10% of the waste is reduced from the waste stream of Metro Manila because of waste picking and recycling efforts. Another estimate is put forth by the Earth Day Network, which estimates the recycling rate at 15%^{xiii}. Mother Earth Foundation (see below) believes recycling rates are up to about 40% including composting and recycling. These differences can partly be attributed to different understandings of recycling.

INTERVENTIONS CREATING ZERO WASTE MODELS

Mother Earth Foundation

The Mother Earth Foundation has applied itself to creating communities, or Barangayas, that generate almost no waste beyond their boundaries. A great deal of the efforts is based upon mobilizing waste generators and the Barangaya Captain, an important local administrator, to take the issue of waste and segregation seriously enough to make systems that work. Several successful projects include segregation, collection-either from the doorstep or other allocated spaces, segregated storage and further segregation of dry, recyclable waste which is finally sold into the recycling trade and composting of wet, organic waste. Other spin offs from this have included unique products from cartons, coir and other materials to produce bags etc.

As a result, only very little waste actually needs municipal support for transportation to the landfills. In this scheme, there is some place for the wastepickers, if they are already located in the area.

Sonia Mendoza of Mother Earth and NGO representative to the National Solid Waste Commission points out

that the data on actual resources recovered comes from registered junkshops only^{xiv}. There is no empirical data that quantifies the volume of waste diverted from the waste stream as a result of the activities of waste pickers. Meanwhile, Linis Ganda says that their junkshop operators only purchase from eco-aides who are also members of their cooperative. This means that those whose contributions to the overall recycling efforts including wastepickers, magbuburaot, and other unregistered junkshop operators are unaccounted for. Hence, recycling figures should be much higher than what has been reported either by government, by Linis Ganda or by the ADB.

Like waste generation, the data on waste diversion is difficult to ascertain as no comprehensive monitoring is being undertaken at the national level. Some local communities already actively implementing ecological waste management and organizations like Linis Ganda compile their own data on waste. However, these are small and local initiatives. Much remains to be done in terms of implementation of RA 9003 on a national scale as reported by the Chair of the National Solid Waste Commission^{xv}.

Wastepicking is one of the most important activities in the diversion of usable resources from the waste stream. Especially for households and communities who do not segregate their waste at this point, waste picking is the first step in realizing RA 9003 and the targets for recycling, waste recovery and waste diversion. Smokey Mountain's wastepickers can claim that they have diverted a substantial amount of waste (between 60-70%) from the waste stream while at the same time providing them with livelihoods^{xvi}.



Linis Ganda predicts that in the next 3 years, more than 1 million households will start segregating waste. According to them, by that time, government shall have saved hauling costs for 3000 trucks. The current waste profile shows that about 52% is compostable. Mother Earth Unlimited estimates that residuals comprise about 10% of the waste stream that will either be for temporary storage or disposal^{xvii}.

In this context, it the interventions from the non government sector seem to promise a way by which

wastepickers can be enabled to seek improved and cleaner livelihoods, while participating in the important task of waste handling. However, it is also significant that while in policy, the waste recyclers have been sidelined, there are, on paper, important steps being taken by the government to help the sector, thereby acknowledging their work, poor working conditions and importance.

Cambodia

There are several players in Cambodia, all of whom are involved and impacted in and by the enterprise of privatization. These include the Canadian company CENTRI, Japanese International Cooperation Agency (JICA), PPWM and CSARO.

PRIVATIZATION

Currently, municipal garbage collection through out the country has been given to the same private company – CINTRI for a period of 50 years. The company is responsible for door-to-door garbage collection and street sweeping. The police is appointed to stop improper disposal or littering of waste. In this system, garbage collection on the main street is done daily. For the rest of the area, it is carried out only twice a week. The charges for garbage collection vary with a minimum of 0.80 USD to 25 USD or more, depending on the size of the house. For hotels or industries the charges are much higher. The garbage collection bill is fused with the electricity charges and non-payment results in cutting off the electricity connection by the authorities.

Due to opposition from JICA however at CENTRI's monopoly, the privatization of garbage collection of a few districts has been handed over to JICA. However there is lack of clarity about the number of districts that have been handed over. Furthermore, it is still difficult to ascertain if any districts have actually been handed over by CENTRI as it may well be a proposed plan and information in the public realm is not yet available. There is also a new district formed recently in Phnom Penh. This district does not have any service provider managing the garbage collection yet.

There is however no public awareness on the norms for the functioning of CENTRI. As a result, there is no accountability towards the recipients of their service and therefore no way to regulate their functioning. Although the company function comes under the ambit of the Governor's office, in practice regulating their function is not easy. This along side with no public grievance system makes it difficult to regulate them in case of non-delivery.

Critics of this step say that contract was given to CINTRI without and tendering process or inviting any other organization. This has resulted in a paradigm shift from the earlier system, where an NGO, CSARO, was offering waste collection services using local wastepickers. CENTRI, however, does not work with waste pickers as they perceive them to be irresponsible persons.

There is a history of displacement in this case. When, in 1993, waste management was handed over to private companies, most of the efforts of waste collection were largely directed towards high profile or densely populated areas. Therefore, CSARO started working with the community in the underserved areas and training waster pickers for door-to door waste picking from 8000 households. The biodegradable waste was also being composted with the help of PPWM. However, in 2003 the Municipal Government handed over all seven districts to CINTRI.

When CSARO handed over the management of waste to CENTRI, it trained the staff of CENTRI to undertake waste segregation for recycling. This is not being followed at present. While in the beginning there were a large number of CSARO staff members with CENTRI, with the gradual phasing out of this staff the capacity for waste segregation and recycling has also decreased. Furthermore, the paid staff of CENTRI does not have any incentive for segregating and recycling waste as it has not been integrated into their regular duties. Therefore, if any segregation does take place, it is usually the garbage truck drivers who may do it before tipping the waste into the landfill. In most of the present waste management systems managed by CENTRI, there is little recycling happening.



However CSARO and Phnom Penh Waste Management (PPWM) have been working at waste segregation and recycling in other areas, such as in the outskirts of the capital, where many residents belong to the lower economic group. At present the PPWM is responsible for the dump site at Stung Mean Chhey and is also working in Sangkat at door to door garbage collection in collaboration with the community. In 2001, PPWM was ordered by the Governor of Phnom Penh to undertake door to door garbage collection. Due to the lack of funds and possibly, owing to existing external capacity, among other issues, it collaborated with CSARO in four districts for the collection of waste. The program

was started initially in two districts and expanded to four. This service was supposed to cost one dollar for every house, though it has not been possible to ascertain the actual cost currently in operation. Of this, 0.3 USD was given to the garbage collector. This waste was then transported to a centralized collection centre where it was segregated into wet and dry sections. The wet waste was then composted. Technical and other assistance was provided by CSARO. This program was called the 'neighborhood improvement program'.

Area wise responsibilities and role between the PPWM and CINTRI

Area Work items	4 Urban Districts	3 Rural Districts
Monitoring and Control	MPP/ DOE	
Collection and Transportation	CINTRI	PPWM / CINTRI
Treatment and recycling	CINTRI	PPWM / CINTRI
Final Disposal	MPP / PPWM	
Public area cleaning	CINTRI	PPWM / CINTRI
Service fee Collection	CINTRI	PPWM / CINTRI

The points of view of recycling for CSARO and PPWM differ. While according to PPWM recycling only includes composting, CSARO includes both composting and management and recycling and reusing of waste through waste pickers. There was also a traditional system for the management of waste. This included feeding food waste to fish and to pigs.

Since almost 80% of the waste generated in Cambodia is bio-degradable, and is no longer being composted, there is clearly an increase in the last 3 years in the waste crisis as perceived by both officials and others. This is the crisis of landfilling : already, one landfill is fast filling up, bringing along with it attendant problems of pollution from leachates, emission of green house gases and a waste of resources that remain very valuable for a country which is still largely rural and can absorb compost. The solution to this is not creating another landfill, but creatively managing organic waste and recycling paper, plastics , metals and other recyclables, as CSARO has demonstrated for many years.

Since CINTRI has taken over, the waste pickers have been pushed away to the final dumpsites, or crude landfills, though some still pick waste from the streets. The impact of such a shift is severe. Working conditions are much worse in landfills and accidents are also more common. There is also only such waste that they access which is not picked out by the transporters, making it low value. Earlier territorial divisions of space are diminished, changing the very organization of work, local support systems and inherent linkages that are typically associated with working on a beat, or a given area. The intervention of privatization therefore has

adversely impacted almost 3000 thousand waste pickers in Phnom Penh, most of whom are children.

When the waste pickers were in door to door garbage collection they were earning almost 50 USD per month, which is higher than the maximum wage of a factory worker in Cambodia which stands at 45 USD.

It becomes clear therefore, that while on one hand, wastepicking at the dump sites is illegal, as it is considered dangerous, on the other hand, wastepickers are being pushed to work on landfills on account of privatization policies that encourage larger players. Their reduced income then further pushes them into poverty.

SUPPORT TO WASTEPICKERS

Despite this contradictory policy, however, the Cambodian government is supporting agencies that provide training and education to the waste pickers at the dump sites. One such agency is Smile Children, which helps train on skills to start alternate trades like opening small food shops. They also have a training centre and a trade centre at the dumpsite. The trade centre is to help waste pickers sell recyclable to the dealer.

CSARO is also involved in many similar activities, where health, education and training of wastepickers is an important aspect of their work. Some of the products the wastepickers are taught to make include bags and flower pots from tires.



Reframing EXTENDED Producer Responsibility

Comparative Summary

The preceding two chapters show that despite policy and grassroots interventions, there is only marginal responsibility, if any, of waste producers and generators towards the informal recycling sector. As a result, the poorest and most marginal sections of urban society shoulder the burden of affluence and consumption.

This highlights the core idea with which this study was undertaken: that of reframing the idea of Extended Producer Responsibility (EPR) in the context of the informal recycling sector as it exists in Asia.

In the three countries studies, there are common features. Some of the most striking of these are:

The several unbranded products or products from unknown manufacturers (perhaps in the gray market or imported from China) that were available alongside comparable branded ones. Examples include electronic and electric goods.

A vibrant informal recycling sector that was innovatively using waste products and materials, extending their useful lives or refashioning them for other purposes.

The similar context of operations of the informal sector. This is on account of the following factors:

1. The severe health crisis the wastepicking sector faces in all three countries on account of the conditions of its work. (See Appendix for more details)
2. A great deal of informal sector reprocessing was being undertaken in extremely polluting conditions. This was particularly at the level of the small waste trader and independent buyer of specific goods for recycling. Items included X-Rays for silver extraction in the Philippines, lead acid batteries and car parts in Cambodia and electronic waste in India.
3. The informal sector has not been allocated space for its multiple activities. It continues to work, but is accorded an illegal status. This results in harassment from civic agencies and police in India and Cambodia. Besides, the spaces used are also not provided with adequate facilities such as water and electrical connections, making the workplace a hazardous one.

4. The informal sector is unable to access benefits accorded to formal sector workers, making their conditions static.

5. Interventions across the three countries show that the initiatives for the sector are grassroots and local, though recycling activities go well beyond this level.

6. There is a concern about 'what is recyclable.' The plastic industry, for example, claims that it makes recyclable products, thereby encouraging the consumer to buy the product as a green one. However, it is not revealed on any labeling that the product is recycled under highly hazardous, polluting and exploitative circumstances, mitigating many benefits of recycling. In this way, the industry hides behind the informal sector to claim brownie points.

Perhaps the most striking aspect of EPR is that despite some legislation in place, it is ineffective, as there is little public participation or even understanding about the issue. This study in all three countries revealed that multiple level responsibility is an important element of awareness that must be re-enforced.

The contrasting yet similar examples of Cambodia and India are useful in this case; While India has a take back policy for lead acid batteries and Cambodia does not, in both cases, the informal sector is a leading recycler of such toxic materials. We find that a transparent, well publicized system for battery take back is missing.

It was also instructive to note how companies that are present in all three countries sometimes maintain differential standards in each one. For example, Coke has set up a collection system in the Philippines, whereas in India, despite recommendations that it do this, there is no such attempt. PET bottles from Coke's various products are strewn across some of the most pristine eco-systems. In Cambodia, where no legislation has been enacted, this obviously has not been undertaken either. The take back by Nokia in the Philippines and not in India is another example.

It was seen in the Philippines, that there is a fairly advanced system of segregation of waste at the household level, which is absent in Cambodia and rudimentary in India. This should be included in any vision of EPR in such countries where the informal sector operates as it is clear that it will protect them from some kinds of health problems, apart from enabling them to work better.

Throughout, there was no case where the informal sector did not offer many possibilities. The Buraot of the Philippines and the junk markets of India are only some of the many possible partnerships. One has to seek these linkages.

India

EPR has several components such as collection and economically viable recycling. The existing systems in India encompass various components of these, suggesting it is possible to knit them together as a comprehensive system under which EPR can operate. However, in all this, there is the clear absence of producer responsibility, which is a critical overarching principle of EPR.

INFORMAL SYSTEMS OF EPR

Informal systems of EPR are not, accurately speaking, EPR as it should be constructed. This is because there is clearly no responsibility of the producer throughout the product life cycle. Take the example of toothpaste tubes. Till the early 1990s, most brands were marketed in metal tubes, collected under the trade name of "Colgate" and recycled as metal through the informal sector. This also points to how information is disseminated in local ways through the informal sector, instead of being made available from the producers' end. The shift towards plastic packaging in the early 1990s resulted in the packaging not being recycled, as there was no clear way of handling them. As a result, much more waste ended up on landfills and more plastic was being wasted annually.

Other examples that include components that could lead to EPR include the reuse and repair of several branded products. This includes mobile phones, CDs (reused as reflectors), kitchen gadgets, old airline cutlery and crockery etc.

There is already proven economic viability of certain kinds of product responsibility, such as collection and reuse. This is being done by the informal sector. The example of Delhi's well-known former Sunday junk market is just one. Here, hundreds of waste pickers, waste dealers and others would take up a small space to sell second hand and repaired goods on Sundays. Visits to the bazaar would reveal that a great number of goods were branded products that were discarded by the original buyers. However, its value as a tool of responsible product handling was not clear to administrators, who finally closed it down. As a result, many goods that were able to find buyers at competitive rates remained unsold or were sold at lower rates, reducing the incentive to actually handle them in the first place.

This suggests that the duties that the producer would have to undertake in an EPR regime are being fulfilled by various other agencies, most notably the informal recycling sector. It offers the possibility of incorporating these systems into a full fledged EPR regime through strengthening such mechanisms like Sunday Baazars.

Measures such as the allocation of space, incentivizing and legitimizing these activities and linking them to manufacturing systems could be one way to develop a practical implementation plan which links up formal and informal systems and is inclusive of the livelihoods of the poor.

Other aspects of EPR, such as segregation, collection and recycling are also embedded in the recycling chain per se. An examination of the goods found in the shop of a junk dealer reveals many products, ranging from PET bottles to toxic PVC coated copper wires. This task is undertaken through the efforts of the informal sector itself, with little industry or producer support.

EPR LEGISLATION IN INDIA

PET bottle take Back Policy

In recent times, PET bottles have begun to be widely distributed across India as beverage containers. Estimates show that in the last 10 years, from 1995, there has been an over 300% increase in consumption of PET. A large portion of this comprises beverage containers. An effort has been made to create a take back scheme on PET bottles.

A Task Force under the Ministry of Environment and Forests and the Central Pollution Control Board (CPCB) asked the plastic industry to come up with an outline scheme to take back PET bottles. The industry representatives suggested a voluntary scheme for collection of PET bottles with suitable incentives offered to the consumer. From a mandatory take back the industry then moved the discussion to a voluntary take back. However the Ranganath Mishra Committee on Plastic Waste Disposal (Constituted by Ministry of Environment and Forests, Government of India), made an attempt to collect PET bottles by introducing the Deposit Return Scheme where each return was rewarded by 25 paise. Since the introduction of a Deposit Refund System (DRS) would make clean PET waste available, this would serve as an incentive for recycling units to recycle the local PET waste. DRS would also encourage bottle to bottle recycling, reducing overall PET consumption. Yet, little has been done by the industry on the ground. Since buying the PET bottles informally is cheaper than formally buying them, another possibility of a link with the informal sector is created.

Despite consensus on PET take back, there is no clear picture as to how this can be operationalized. Amongst the arguments put forth are the transportation costs and the far-flung reprocessing units, which make collection unviable. However, where PET bottles are being collected, they are not only made into flakes, for sale to reprocessing units, but also exported to countries like China. This then stands contrary to the very principles of EPR. Till date, the only other interim measure has been a brand protection exercise by leading manufacturer of mineral water to prevent adulteration. The manufacturer installed crude devices that encouraged users of PET bottles to crush them (using a wooden guillotine like device equipped with a nail in order to damage the bottle and prevent refilling of water).

As a result, PET collection and recycling still takes place at an informal level.

The Batteries (Management and Handling) Rules, 2001

Lead Acid Batteries are generated primarily from automobiles, buses and heavy transport vehicles. Given their lead content, they have been placed under the Batteries (Management and Handling) Rules, 2001, so that this highly toxic material can be reclaimed under relatively safe conditions. The rules came after several studies about the high lead percentage and public concern in the media created the climate for framing these rules.

The rules mandate that used lead acid batteries can only be sold to authorized collectors or recyclers. In the case of recyclers, such units are allowed to operate only after an appropriate authorization from the regulatory agency. This is to ensure environmentally safe functioning. The industry was expected to set up collection systems in order to ensure the safe flow of the batteries into such facilities.

Currently, a large percentage of lead acid batteries are recycled in crude semi-permanent units comprising only a make-shift kiln and chimney, operating as sweat shops. There is no worker protection either. The estimated supply of recycled lead in India from the informal sector is estimated at 70000 tons. These operations receive their supplies from the many local dealers and automobile mechanics. The profits can be as 60-70% , offering competition to any formal system. However, the industry has not as yet set up linkages with the existing collectors and only a feeble attempt has been made towards meeting the legislative requirements.

OTHER LEGISLATION WHICH COULD INCLUDE EPR

There is other legislation that would have impacted EPR operationalization in India has it been able to include the concept in its framing. The Hazardous Waste (Management and Handling) Rules 1989, (amended 2003) address industrial waste, which is often dumped illegally into municipal bins and finally, into landfills, exposing both wastepickers and municipal workers to multiple hazards. There is also no legislation for individual household toxics like ni-cad cells, mercury thermometers etc. Since the rules are on the basis of chemicals rather than products, it is difficult to use them for producer responsibility directly. There is a clear need for instruments that address this.

EPR WITHOUT LEGISLATION

In India, there are also examples of EPR is undertaken on a voluntary basis.

The case of glass soda bottles is instructive. The bottles are picked up and transported back through a complex and highly organized take back system, that is based on a system of deposit fees by the consumer, incentivizing return, and an economically viable method of storage and collection that is tied up with distribution systems.

Another case is that of Tetra Pak Pvt Ltd. Tetra Pak packaging is increasingly being adopted for a variety of beverages and other fluid food products. The packaging itself comprises 80% high grade paper. The rest of the packaging includes plastic and aluminum foil. Due to the fused nature of these materials, the informal sector does not pick it up for recycling, as the labour cost in removing the plastics and foil make it uneconomical. However, Tetra Pak found, after its own research, that the material was suitable for being recycled into carton and board.

In order to set up an appropriate collection system, Tetra Pak in Delhi worked with Chintan in order to create a viable collection system in 2 pilot projects. The system included :

- Training the wastepickers** to distinguish between Tetra Pak Packaging and other packaging that could not be recycled.
- Establishing a protocol** by which the packaging was collected, enumerated, weighed and payments made.
- Determining a minimum price** to be paid to the collectors.
- To determine how the system could run** beyond a pilot.
- To ensure** that the collected packaging could be recycled in an appropriate facility.

As a result, Tetra Pak was able to establish a means by which recycling its waste, generated from assorted manufactures and clients, was possible. The initiative is yet to become a permanent system as it has only just been tested. It is also proposed for other cities.

The following points can be made from the above :
That there is a strong livelihood aspect of recycling that allows many poorer persons eke out a living.
There is no industry or producer responsibility seen for this recycling.

The components that constitute EPR can be seen in this chain, though some essential parts, like product take back and material substitution, are not implemented. Streamlining the above can lead to a win-win situation for sustainable product recycling with protection of existing livelihoods dependant on such recycling.

The Philippines

Extended Producer Responsibility (EPR) is a strategy based on the "Polluters Pay" Principle in order to make producers responsible for the products that they produce for its entire life cycle. In the Philippines, we see the formal EPR system introduced through legislation that clearly appreciated the importance of the principals of EPR, as well the potential to introduce EPR systems through the existing work of the informal sector.

EPR BASED LEGISLATION

The Polluters Pays Principle is not new to the Philippines. In fact, it was introduced via Philippine Agenda 21 in 1992. It has been adopted in succeeding environmental laws since and is clearly articulated in the RA 9003.

Section 27 of RA 9003 gives the mandate to the Department of Trade and Industry to formulate a coding system for packaging materials to facilitate recycling and re-use. In 2003, a private sector led initiative for eco-labeling called Green Choice Philippines was established. A Memorandum of Agreement to implement eco-labeling was signed by The Clean and Green Foundation, Inc. together with the Department of Trade and Industry, Department of Environment and Natural Resources, Department of Energy, Department of Science and Technology, Development Academy of the Philippines, Philippine Business for the Environment, Citizens Alliance for Consumer Protection, and National Consumer Affairs Council¹. Green Choice is intended to provide consumers and producers a choice to:

- (1) Guide the consumers to choose products that are environmentally sound;
- (2) Encourage manufacturers to adopt processes and supply products that have less adverse environmental impact; and
- (3) Use the label as a "market-based instrument" to complement the Government's environment policy.

There are also other provisions in RA 9003 that can strengthen EPR. Section 28 requires the establishment of reclamation programs and setting up of buy-back centers for recyclables as well as toxic and hazardous wastes. Section 29 mandates the Solid Waste Commission to come up with a list of non-environmentally acceptable products and prohibit their use. Section 30 phases out the use non-environmentally acceptable packaging and penalizes those who continue to use them.

Implementation, however, is far from adequate. Although it has been three years since the law has come into effect Philippine society has yet to see more concrete and convincing efforts to implement these provisions.

As far as EPR is concerned, much remains to be done in terms of getting producer companies to come up with their own policies. Some soft drink companies have take back schemes for its aluminum cans or Polyethylene Terephthalate (PET) bottles.

Some companies have employed a few EPR tools available. Coca Cola Bottlers Philippines, for example, has a waste recovery program for its PET bottles called Pinoy Environment Team (P.E.T.)ⁱⁱ. It set up 12 recovery centers for 1.5 and 2 liter bottles in selected outlets. It also works with the Girl and Boy Scouts of the Philippines and other organizations. From December 2000 to August 2002, they reported recovering 1,477,000 pieces or 66,465 kilograms of 1.5 liter bottles.

Even the recovery program for PET bottles is far from desirable. While there are recovery programmes for PET plastics, they cannot be recycled to its original product. They are downcycled. There are other EPR tools available but many of the efforts in the Philippines are severely inadequate and are voluntary, not mandatory. Hence, the attitude of companies has always been, "if there is a law, we will follow it; if there's none then we are not violating anything". Current efforts are seen by certain quarters as inadequate. Instead companies should ensure that PET bottles, for example,

are all taken back or replaced with glass bottles and other safer packaging alternatives.

Some companies, like pesticide companies, even have product stewardship policies. Others employ material materials substitution. Well known companies like Nokia and Hewlett Packard have take back programmes for used electronics in the Philippines. While it is an encouraging step forward, the efforts are still not enough as they only take product responsibility only to a certain degree of its life cycle, not throughout its life cycle.

THE INFORMAL SECTOR

Due to the current voluntary nature of EPR initiatives, the responsibility of cleaning up the waste generated by industry for mass consumption rests on the informal sector. While this may prove to be lucrative for them, the downside of this in most cases is that they treat all waste as equal and are unable to distinguish between potentially toxic and hazardous materials. Hence, they are not accorded the same protection as when waste management and disposal is being done by the company that produces the product.



At the wastepickers end, as mentioned earlier, daily earnings are substituted through scavenging and selling buraot, or reusable products. Most of the buraot from Smokey Mountain traded in a district in the capital called Divisoria are sourced from Smokey Mountain's scavengers or junkshop operators. Selling buraot provides income of between 18 USD on an average day to about 90 USD on a good day depending on the value of the buraot. A scavenger can sell a watch's dial to the magbuburaot, or Buraot dealer, at 2 pesos (0.04 USD)ⁱⁱⁱ. Bigger and better quality items usually fetch higher prices. Before noon, the items shall have been traded or stored and taken out again for the following day's trading. They also visit the dump every day to check out the items that the scavengers are willing to sell. Usually, the magbuburaot share items with one another or sell to a fellow magbuburaot at

cost. As much as possible they try not to compete with each other.

No permits are given to the magbuburaot. So, while they are able to sell their items in Divisoria, there are times when they have to deal with harassment or extortion by cops and other public officials^{iv}. Sometimes they are also driven away. Ironically, the magbuburaot helps save valuable space by their recovery activities, yet are deprived space for themselves and their economic activities.

The Philippines example clearly demonstrates the potential of implementing an EPR system, given a combination of both legislation and existing practices on the ground. One of the most encouraging signs in the Philippines has been the fact that it appears to have mainstreamed the idea of EPR in its legislation, thereby creating a climate for change in this area. How this is integrated with the informal sector efforts is, however, uncertain.

Cambodia

There is no law for EPR in Cambodia. Any aspects of EPR, such as collection or recycling takes place on account of the economics involved, without the involvement of the producer. There are very few recycling units in Phnom Penh and any material collected by the waste pickers is sold directly to the middle men. Most of this material is then sold either in Thailand or Vietnam. Although the sub-decree for the management of solid waste is supposed to regulate this trade, this is still not clearly spelled out.

Like in the other countries studied, there are a very large number of branded products in Cambodia. Among others automobiles, manufactured by major international automobile manufacturers, a number of old and refurbished cars are also sold in the country. While there is little information on the role of the industry for management of the automobiles.



It is possible that given the lax regulations, the automobile manufactures may not be following the same practices as they do in Europe for end of life management of vehicles. This creates concerns of possible double standards for different parts of the world .

Equally, as a large number of refurbished cars are also available in Cambodia, there is a concern of possible dumping of vehicles in the country. This, however, is an aspect still under investigation by various organizations.

It is also possible that, given the tendency to export waste to Vietnam and Thailand for recycling, a system of cross boundary pollution is being established. In the case of lead acid batteries, recycling is also being carried out locally, in presumably polluting conditions.

Hazardous waste is also listed out in detail. (see country note in the Appendix) However, neither the generators nor the producers have a clear guideline based upon these about the required action and responsibility.

Given the relatively blank slate available in Cambodia, there exists an opportunity to legislate for EPR that is both non-polluting and inclusive of an increasingly marginalized informal sector.

Taking it FORWARD

The preceding chapters have shown that it is valid to re-imagine waste as an opportunity rather than a problem. As the examples of both some government agencies and non government agencies show, changing the way we treat waste contains the potential for enhanced livelihoods, reduced urban poverty, better health and of course, a cleaner environment where less resources are depleted.

All this has been shown to be possible in the case of India, the Philippines and Cambodia. But it is also true that this will be valid in the case of most other countries where an informal sector is at work in the realm of waste.

Before discussing how to move ahead, here is a short summary of the study itself, the opportunities and threats.

What are the learnings?

There are several learnings that come out from this study:

There is great similarity despite diverse economic, social and political conditions.

There is a similar isolation of the sector from policy. Legislation and policy is primarily aimed at handling waste but is not inclusive of waste recyclers from the informal sector. Additionally, policy and legislation, where it exists is only targeted at wastepickers and not at the rest of the informal sector.

Interventions from civil society, such as pilot projects and programmes to help wastepickers and to handle solid waste contain many common elements.

The informal sector works under similar conditions in all three countries. Both studies and group discussions show the severe health impacts of this work on wastepickers, the less than minimum or only minimum wages that they earn and the low social status they are accorded by society.

Legislation in the three countries was seen to be at different stages of development. It was also seen to be growing into different directions in some cases.



Within wastepickers, there is a varying level of negotiating capacity and of understanding of their own working context. This suggests that there has been varying degrees of work with the sector in terms of their capacity building.

The worksites of wastepickers were different from country to country. In the Philippines and Cambodia, work is undertaken mostly at final dumpsites. In India, wastepickers scour the city and the community level waste bins for recyclables. Similarly, the presence of small waste dealers at the dumpsites in these two countries is different from the Indian situation, where there is little waste trading at the dumpsite and very few wastepickers.

Reprocessing of the segregated materials does not follow the same path everywhere. While there is some reprocessing taking place in the Philippines and a great deal in India, the story is different for Cambodia, where a large fraction of the commonly found recyclable waste is being exported for recycling to other neighbouring countries.

What are the opportunities?

In the context of the striking similarities and the conditions of the waste recyclers in each of the three countries, there are also a number of opportunities.

In both India and Cambodia, there is still a great deal of **city planning and urban improvement** and renewal that is being undertaken. This can provide opportunities, currently, not present, for the sector to be comprehensively included in city planning and urban service delivery systems.

Opportunities are also clearly seen in the successful local level initiatives by organizations across the three countries that showcase possibilities of organizing, building capacity and reframing the terms of work of the sector.

There has been an **increasing international recognition of the need to mitigate urban poverty**. As this percolates down to country and city levels, there is a strong possibility of greater conscious inclusion of the marginal informal sector, which will also include waste recyclers and innovative means of doing so.

The last few years has seen a growing **global concern about toxic materials** and waste, both in terms of usage and generation at the country level and in terms of transboundary movement and differential levels of responsibility at the global level. As international emphasis on corporate social responsibility (CSR) increases, pressure is created to introduce EPR and safeguard the health of those working in the recycling sector.

While **rights based language** has existed in India for a long time, it is now being mainstreamed and explored more deeply in the Philippines as well. This is evident through the formation of tangible organizations of waste pickers which are based upon demanding a number of rights, such as safe work, right to waste etc.



In all three countries, and in Asia, there is an evolving policy in waste. While it may contain several components that are beneficial to wastepickers, the evolving nature of such legislation allows for shifts.

What are the threats?

In the current trajectory of urban development, there are also a number of threats, which can impact the waste recycling sector. These include:

Privatization of waste delivery services and waste management. These are seen to displace wastepickers and therefore marginalize them further.

Several technologies, particularly those such as incineration, gasification and other burn technologies require calorie rich waste, such as plastics and paper. This is also the basis of the informal recycling sector's livelihood. For this reason, therefore, the sector stands to lose its very livelihood if such technologies are promoted.

Unchanging, isolationist legislation is another threat to the sector. Although it is currently evolving, if policy does not change or adapt to them, the sector will be left coping and be further marginalized.

The increasing informalization of labour is a global phenomenon that is also being seen in the countries studied. If this is not arrested, it poses a threat to the work and survival of the sector.

As the examples of Delhi and Mumbai in India and Manila in the Philippines show, urban spaces are almost bursting open at the seams. While the recycling chain continues its work, it is not **allocated formal space** required for this purpose on the pretext that there is none. This also makes its position precarious and renders it vulnerable to various types of exploitation.



New kinds of materials have made their presence widespread. These include non-recyclable packaging, toxic products, such as increasing number of electronics and more and more products that comprise untested new chemicals.

The way forward

It is of primary importance that the **informal sector is fused with formal recycling initiatives**. The informal sector must be showcased as an entrepreneurial model with investments in the sector through EPR. These investments will allow the informal sector to work under healthy and safe conditions as the secondary implementers of EPR, keeping intact their livelihoods while allowing producers undertaking their responsibility. Such inclusion, in Asia, should be inherently woven into EPR. In fact, both EPR and corporate social responsibility

in developing countries must necessarily mainstream poverty alleviation and safe livelihoods in their practices.

This study itself is based upon **creating a network** that exchanged ideas, experiences and information, to glean out practices that worked and those that did not. Such networks must be strengthened in order to enrich the understanding of many of the issues discussed in this study. Similarly, communities of practice should be created. This must be developed into a system where multiple kinds of exchanges can take place to feed into both emerging systems of waste handling through EPR instruments and to enhance these where they exist.



The study shows how each country's legislation reflects the understanding of recycling. Many of these issues were not widely known before this, and the study showed how similar countries in Asia could develop such policies that were simultaneously conducive to both recycling and the informal waste-recycling sector. **Policy thus should be informed through both cross-country exchanges**, where both legislation and experiences from the ground play a role.



One of the objectives of the EPR regime is **to reduce toxics** from the waste stream. If this was done, then clearly, the health of the informal sector would stand safeguarded. Hence, not only does an EPR regime benefit from the presence of the informal recycling sector, but the sector's own working conditions can be decisively impacted by the implementation of EPR.

APPENDIX

Appendix 1 : Country Notes

INDIA

By 2020, India will have more than 400 million urban inhabitants. This has implications for waste as the land used for dumping waste has increased by 20,000% from 1947 to 1997. (based on Central Pollution Control Board figures). These are estimates only from formal and semi-formal systems based out of urban and peri-urban India.

Moreover, the waste generated has also changed in character, as more plastics, paper and other materials are more frequently used and discarded.

In 1991, urban India produced 23.86 million tonnes of waste. Urban Indians use twice as many resources per capita than those living in rural areas and 300 million of them generate an estimated 110,000 tonnes of waste every day. In 2001 it is estimated that urban India produced almost 40 million tonnes, or more than 120 million truckloads of waste annually. What will happen as the per capita income increase from the current level of USD 330 to USD 620? It is predicted that India will probably see a rise in waste generation from less than 40,000 MT per year to over 125,000 MT by the year 2030.



Within cities, the poor generate much less waste. Some studies suggest that the affluent generate almost two thirds more waste than the poor in a big city. Municipal services are also uneven. Many affluent areas receive better services than poor pockets.

Rural India, which has traditionally been able to use almost all the waste generated, faces a problem that is not recognized either. While waste here previously comprised crop residue, animal dung and other organic matter, with the advent of plastics and packaging, this is changing, creating more problems. Here, these issues are now largely handled by the Panchayats and even individuals themselves.

In urban areas, an Urban Local Body or a Municipality is mandated to look after waste management. The State Pollution Control Board is expected to monitor the waste handling for the pollution load it can add to the environment. Many of these are cash strapped and unable to manage the municipality in any innovative fashion. The most earnest municipal managers follows two main paths of work. The first is to improve the collection of waste, its transportation and its disposal to become more efficient and better managed through improved basic equipment, more monitoring and improved management systems. Currently, almost 2/3rds of a municipal budget is spent on collection systems and only 1/20th on disposal. The other path entails privatising many aspects of waste handling both through local tenders and global ones. There is thus a trend to privatise the waste handling in a piecemeal manner. Only very few of these actually improve the capacity of the officials to improve their own management skills or seek examples from successful undertaking under similar circumstances from Asia. Instead of this we find that the desired best practices for India are gleaned from countries that are not comparable: Singapore, Germany, the United States amongst others.

Waste in India is also mired in the issue of caste, pollution and impurity. Traditionally, waste handlers were persons handling human waste and belonged to the lowest castes and were extremely marginalized: politically, socially and economically. Their occupation further debased their condition. Today, migrants to urban conglomerates continue to carry with them similar biases. Consequently, waste handlers, though handlers of a different kind of waste, continue to be looked down upon and face enormous public contempt and distrust. Both formal sector workers handling waste

and sewage, as well as informal sector workers face such hostility. In the case of the formal sector, they are both organized and their work is widely acknowledged as essential, enabling them to leverage a series of political and social transactions. The informal sector has not reached this level of respectability and continues to bear the brunt of picking up materials and objects associated with low value and high pollution.



Historically, India has also seen, from its colonial experience, the creation of criminal tribes, whereby clearly various identifiable and marginalized communities were branded as criminal tribes and treated as such. The idea of criminal tribes continues even in contemporary India, where, amongst others, wastepickers and waste dealers are the seen as the new criminal tribes, on account of their proximity to waste generators. This proximity is two fold : one, on account of information they can piece together about the generators using clues from the waste discarded, which allows them an indirect access to the generator. Second, they have a physical proximity, based upon their work, which takes them to waste dumps, usually close to the generators' homes. This has lead to a widespread and misplaced understanding that given the information at their disposal, wastepickers are either thieves themselves or share their information with thieves. The stolen goods are then sold to the waste dealers, who are also seen as part of the criminal tribe nexus.

In India therefore, waste recyclers are is still enmeshed in complex social frameworks.

THE PHILIPPINES

Baryo Magdaragat^{ix} was essentially what its name translated to : a village of fisherfolks, which was located at the mouth of Manila Bay in Tondo District, Manila. More than 50 years ago, the villagers fished and gleaned seashells from the bountiful sea. As Manila developed, waste was created and disposal became an important concern for the city. In 1954, the government gave the permission for Manila to start dumping waste in

this coastal community. Within a span of 30 years, the beautiful village was turned into a mountain of rot, stench, poison, poverty and desperation. Baryo Magdaragat no longer exists and in its place, a mountain of garbage now known all over the world as Smokey Mountain.

The Asian Development Bank (ADB) estimates that 150,000 Metro Manilans live and work in and around its dumpsites of which 4,300 are wastepickers^{ix}. In Smokey Mountain itself, the wastepickers estimate their numbers to be a 1000 people at the Pier 18 transfer station during the day^{ix}. At night there may be around 800 people. The wastepickers working in the morning are the pang-umaga while those working in the evening are the panggabi.

On average, a scavenger at Smokey Mountain earns between 200 to 400 pesos (3.57-7.14 USD) per day^{ix}. The daily minimum wage for Metro Manila wage earners is 300 pesos (5.35 USD)^{ix}. The daily earnings from scavenging is within the range of what minimum wage earners would earn from a day's work, which is nevertheless, insufficient for the family's needs. Apart from the wastepickers at the garbage dumps, there are also itinerant waste pickers, those with pushcarts or bicycles with sidecars. These wastepickers usually operate in a specific area and pick waste both from waste bins and other places where garbage piles may exist. However, there are certain villages especially among the more exclusive enclaves where itinerant waste pickers are not allowed to enter. Like waste pickers in the dumpsites, they sell the discards to the magbuburaot or to junkshop operators.



However, the waste situation in the country is grim. The National Solid Waste Commission, the body that oversees the implementation of solid waste management plans and prescribes policies in order to achieve ^{ix} pegs waste generation in the whole country at 10 million tons annually^{ix}. Metro Manila generates the highest volume of waste of 2.4 million tons per year or 6700 tons per day^{ix}. This is almost ^o of the total waste generated. This means that with 12 million Metro Manilans (2004), the per capita waste generation is

0.56 kilograms^{ix}. The national average of waste generated for a population of 84 million would be 0.3 kilos per person per day.

Waste Generation Data

National	Metro Manila
10 million tons annually	2.4 million tons annually or 6700 tons per day
0.3 kilos per person per day	0.56 kilos per person per day

The most recent data from the National Solid Waste Commission, however, shows a huge reduction in waste generated by more than a thousand tons. NGOs estimate recovery and recycling efforts to have increased to about 40%. Wastepickers from Smokey Mountain claim that they are able to recover and recycle between 60 and 70% of the waste that reaches the dumpsites.

Of the 6,700 tons of waste generated, the Asian Development Bank (ADB) reports that only 720 tons is recycled and composted and about 6,000 tons (90%) is either hauled to dumpsites or landfills, dumped in rivers, creeks and vacant lots or burned^{ix}. JICA (Japanese International Cooperation Agency) says that of the 6,000 tons, 73% (4,380 tons) of the waste is collected and 27% is illegally dumped or burned^{ix}. Waste pickers and NGOs disagree with the ADB figure. Sonia Mendoza of Mother Earth Foundation says the figure is meant to justify the construction of huge and expensive sanitary landfills which the ADB supports. She estimates resource recovery rates at about 40-50%. Even the National Solid Waste Commission has a lower figure for waste generation for Metro Manila (5,137 tons per day^{ix}). Between the ADB and the Commission data is a difference of 1,563 tons of waste, a significant amount.

National Waste Profile

Composition	%	Source	%
Kitchen Waste	45	Household waste	74
Grass and wood	7	Shops	9
Paper	17	Markets	7.6
Plastic	16	Restaurants	7.5
Metal	5	Street sweepings	1
Glass	3	Institutions	0.8
Leather and Rubber	1	River Cleanups	0.1
Ceramic and stone	1		
Others	1		
Total Waste Generated	100		100

Source: MMDA-Metro Manila Development Authority

Manila Development Authority

At present Metro Manila has 10 dumpsites most of which are operating beyond capacity. The RA 9003 does not allow operation of any open dumpsite after

2004. Open dumpsites may, however, be converted to controlled dumps and may operate only until the end of 2006^{ix}. However, NGOs argue that the only difference between the controlled dump and an open dump is that in the former the waste is covered with soil, but in reality, both release the same toxic substances.

The daily wage of a wastepicker in Manila is about the same as the minimum wage for the country. This however is still insufficient for a family's needs. Therefore all members of the family need to work at the dump to add to the family income. According to the waste pickers, of late, they have had to compete with the "paleros" (garbage truck assistants) who have also discovered the monetary value of recyclables. Instead of the scavengers having priority access over waste, the systematization of collection now allows the paleros first pick of the discards leaving very little for them. Consequently, their earnings are greatly reduced. Although segregation is already being done by some households, without the proper segregation systems institutionalized at either the barangay, municipality or city levels, the recyclables end up in the garbage truck. The paleros then separate them to be sold to the junkshop usually just at the entrance of the dumpsite.

Wastepicker's Income

	Philippine pesos	USD
Minimum wage for Metro Manila workers	300	5.35
Average daily income from waste	200-400	3.57-7.14
Average monthly income from waste	1200-2400	85-90

^{ix}Magdaragat is the Tagalog term for fisher and is rooted in the word, dagat or sea.

^{ix}ADB. 2004. The Garbage Book: Solid Waste Management in Metro Manila. p.50.

^{ix}Mentioned during focused group discussion at the Smokey Mountain Permanent housing facilities, 5 October 2004.

^{ix}Exchange rate: 56 pesos to 1 US dollar.

^{ix}Danilo Arana Arao. *On the P 20 wage hike in Metro Manila: 3 Family Wage Earners Not Enough*. Bulatlat Vol. IV No. 21. June 27 - July 3, 2004. Quezon City. http://www.bulatlat.com/news/4-21/4-21_wage.html Website last visited 13 October 2004.

^{ix}Gonzales, Eugenio M., Revised December 2003. *From Wastes to Assets: The Scavengers of Payatas*. HYPERLINK <http://www.umass.edu/peri/pdfs/CDP7.pdf> Website visited on 6 November 2004.

^{ix}The National Solid Waste Commission is comprised of 14 government representatives, 1 representative from the NGOs, 1 representative from the recycling

^{ix}industry and 1 representative from the plastics manufacturing industry. It is chaired by the Secretary of the Department of Environment and Natural Resources.

^{ix}Implementation of RA 9003 and Challenges Under the Arroyo Administration. Talk given by Sonia Mendoza, NGO Representative to the National Solid Waste Commission at the Ecowaste Coalition General Assembly. 15 September 2004. Environmental Studies Institute, Miriam College. Philippines.

^{ix}ADB. 2004. The Garbage Book: Solid Waste Management in Metro Manila.

^{ix}Japan International Cooperation Agency. 1999. Metro Manila Solid Waste Management Masterplan.

^{ix}ADB. 2004. The Garbage Book: Solid Waste Management in Metro Manila.

^{ix}Environmental Industries Market in the Philippines. UK Trade and Investment. <http://www.trade.uktradeinvest.gov.uk/environment/philippines/> Website visited 28 September 2004.

^{ix}Chart for Metro Manila's Waste Disposal Flow. Data from the National Solid Waste Commission. 2004.

^{ix}Section 37, Republic Act 9003.

CAMBODIA

The Capital of the Royal Kingdom of Cambodia is Phnom Penh, with a population of more than a million people, stretching over an area of 290 square kilometers.

The city of Phnom Penh is under transition since the end of the civil war in 1993. Most of the reconstruction work is taking place with the help of the Japanese government. However, greater attention needs to be paid to the city's infrastructure as drainage and waste collection systems are inadequate. In fact Phnom Penh does not have any waste management plan as yet.

A large number of rural – urban migrants coming to Phnom Penh for jobs and a better livelihood are involved in the informal recycling industry of the city. This includes collection of waste through picking and buying of recyclable from house hold and streets throughout the city. As mentioned before more than 3000 waste pickers are operating in the city most of which are operating at the Stung Mean Chhey dumpsite, although waste picking here is illegal. Wastepickers sell these materials to specialized dealers, or exporters for further transportation to Vietnam or Thailand or some times even within Cambodia. The PPWM has also established a trading center at the dumpsite where dealers can buy recyclables from waste pickers.

Outside Phnom Penh, there are only a few wastepickers and no formal waste management systems. There is little information on waste issues in the rural areas,

though there are waste management concerns. For example, one of the sources for energy in the rural Cambodia is batteries, but with the lack of a waste management strategy there is no proper system for their disposal.



At present there is only one waste disposal site at Stung Mean Chhey. This was started in 1960 and is expected to close in 2007. There is therefore a plan being developed to develop a new waste disposal site (a sanitary landfill) by JICA in CHERNG AK in Donkor District by 2007. JICA is presently developing a master plan for waste management for Phnom Penh to be implemented in the year 2015. It is also responsible for developing the new sanitary landfill for waste from Phnom Penh, guiding the Phnom Penh Waste Management (PPWM) for the management of the present land fill.

Waste generated per person is small and stands at 487g/person /day. There is also an active traditional system which recycles about 9.3 percent of the waste. Infectious medical waste is estimated to be 0.96 tons/day, or 350 tons/year. There is limited hazardous industrial waste of the total of 1.9 tons/day or 694 tons a year. Besides another 56.3 tons/day or 20,550 tons a year of non-hazardous industrial waste is also produced.

Most waste in Phnom Penh is sent directly to the landfill. Although wastepicking is illegal at this dump site, waste pickers do work at the site.

A waste picker in Phnom Penh usually earns between USD 1 to 3 daily, working for at least 10 hours. The waste is usually sold to the middle men who make a profit of almost 50% from the trade.

The classification of hazardous waste according the Ministry of Environment included a very wide ambit ranging from fibrous and cloth waste to acid waste. These include:

- Fibrous and clothing wastes from textile and garment industry;
- Paper waste from paper-mill industry;
- Sludge waste from factory waste water treatment and product manufacturing processes;

- Combustion residues from coal-fired power plants; Plastics waste from production or use of plasticizers;
- PCB waste from use of PCB contained in discarded air conditioners, TVs and microwaves;
- Rubber waste from production or use of resins and latex;
- Oil waste from oil refinery, use of lubrication oils, washing oils;
- Acid waste;
- Alkalis waste;
- Metal waste and their compounds: Zinc (Zn), Selenium (Se), Tin (Sn), Vanadium (V) Copper (Cu), Arsenic (As), Barium (Ba), Cobalt (Co) Nickel (Ni), Antimony (Sb), Beryllium (Be), Tellurium (Te), Lead (Pb), Titanium (Ti), Uranium (U) Silver (Ag)
- Soot and dust waste from incineration facilities, treating exhaust gas;
- Wastes from used or discarded electricity lamp;
- Wastes from production or use of battery;
- Wastes from production and use of paints, lacquers and pigments;
- Wastes from production and use of inks and dyes;
- Explosive wastes;
- Infectious diseases wastes;
- Agriculture drugs wastes;
- Ask wastes from incinerators;
- Wastes from expired products;
- Wastes from production and use of film;
- Waste from treatment of polluted soil;
- Waste from production of drugs and medicines, and expired drugs;
- Inorganic fluorine wastes;
- Cyanide wastes;
- Asbestos wastes;
- Phenols wastes;
- Ethers wastes;
- Wastes from production and use of solvents;
- Wastes from production and use of dioxin and furan;
- Radioactive wastes;
- Wastes produced as a result of treating above items

Appendix 2 : The Health Cost of Wastepicking

Wastepickers are certainly the most vulnerably placed in terms of health, in the recycling chain. This is on account of their proximity to the waste, its dirty, pre-segregated and pre-washed condition and their own work areas which are also hazardous. One of the most severe repercussions of a wastepicker's work, as it is currently undertaken in any part of the world, is that of occupational safety.

The waste pickers say they are concerned about the health impacts of working in and living near waste bins, dumps and landfills. However, given how precarious their livelihoods are, these issues are not addressed as a top priority.

Many illnesses occur commonly in all three countries. These include respiratory illnesses, fevers and diarrhea. In India, a study comprising both physical and medical tests by Chintan showed that the most important problems amongst children wastepickers included fever

(25%), and Gastro-intestinal diseases and diarrhea (17.31%). Amongst women, the most commonly cited illnesses were fever (11.41%), upper respiratory infection with fever (8.70%) and other gastro-intestinal diseases (8.70%). Amongst men, they complained of Gastro-intestinal diseases (18.75%) and body ache (18.75%).

In the Philippines, the most common illnesses that many wastepickers encounter are influenza and like in India, gastro-intestinal diseases like diarrhea. This is corroborated by health workers of Smokey Mountain, who say that 3 to 4 people come in everyday complaining of diarrhea. The Department of Health (DOH) Field Health Surveillance and Information System listed the incidence of pneumonia and diarrhea as highest in the country in 2002.



Respiratory ailments especially tuberculosis, pneumonia, asthma are found in 70% of those who live in Smokey Mountain. Data from the DOH on Smokey Mountain and Payatas indicates that bronchitis and asthma are highly prevalent. More than 50% of the children also have below normal pulmonary function. For Delhi's wastepickers, blood tests show that 59 percent of children, 42% of women and 61% of the men have a high eosinophil count. This manifests itself as breathlessness and indicates that they are suffering from allergies. Much of this could be occupation related and can also be correlated to their complaint of breathing problems. A similar problem is widely reported from Cambodia, where wastepickers in Phnom Penh complain of respiratory infection and distress.

Skin disease is found in 40% of the scavengers in Smokey Mountain. The health workers attribute this to lack of water, pests and pollution in general.

There are some health issues that impacted all wastepickers in common :

Medical Waste

Wastepickers everywhere worry about the infectious diseases from hospital wastes as they bear various pathogens. Syringes, used surgical gloves, needles, expired medicines and body parts are found in the waste stream. Others dispose of their medical waste in landfills or dumpsites. Studies show that in Delhi,

35% of the men wastepickers, 11% of children and 9% of women can clearly state that they have picked up medical waste. However, both wastepickers and officials in Cambodia state that since a private company has been picking up the hospital waste, and is paid by weight for this, they have inadvertently gained from this, as they do not have to touch medical waste.

Sadly, across the spectrum, most of them are unaware of the ill-health this can cause them.

Contaminated Food

Waste pickers also face problems of contracting diseases from eating contaminated food. In the Philippines, food wastes are also retrieved, washed and fried with lots of spices and sold or served. According to the health workers in charge of Smokey Mountain these practices are the most common mode of transmission for hepatitis. In Cambodia, another aspect of contaminated or poor quality food was widely prevalent amongst wastepickers: Goitre. Several wastepickers complained of this problem.

Pathogens from Waste

There is also high fecal contamination in waste dumps, hence pathogens also abound. Protozoa, helminthes, viruses and bacteria are found in human and animal feces. The DOH says that more than half of the wastepickers in Smokey Mountain and Payatas suffer from intestinal parasitism, specifically ascaris and trichuris. Some of the wastepickers also bring the dirty discards home, clean them there and wait till they have substantial volumes before bringing them to the junkshop. This is another route for contamination. Protozoan pathogens in the feces may cause diseases such as dysentery, colonic ulceration, amoebic dysentery, liver abscess, diarrhea, and giardiasis. Flatworms, tapeworms, round worms and trematodes are known to cause digestive disorders. Poliovirus and hepatitis viruses cause poliomyelitis and hepatitis A and B, respectively. Fecal bacteria are the important causes of diarrhea, typhoid fever, bacillary dysentery and cholera.

Exposure to Toxics

Exposure to a cocktail of toxic fumes and other chemicals in the dump and from open burning is also a major threat to the health of the community.

Wastepickers burn PVC coated copper wires in order to extract copper, which sells at a high price. They find that cutting it can result in sharp cuts on their fingers and hands. However, burning copper wires results in the production of dioxins, some of the most toxic chemicals known. Dioxins are known to have some negative effects on reproduction, the immune system and may cause birth defects as well as cancers. Sixty One percent of the men and 62% children also recalled burning PVC coated copper wires, according to the Chintan study. This would have exposed them to numerous toxics during their work.

The Philippines DOH data indicates very high blood lead levels especially in children near waste dumps or working on them. Waste pickers often burn garbage to find metals which have a high market value. A common practice in Smokey Mountain and many other dumps elsewhere is called "sala". This is the process of sifting through ash and water for valuables. A high incidence of birth defects among children born to scavengers is therefore not inconceivable.

In India, it is not unusual to find wastepickers handling waste motor oil bought from car mechanics, which can contain harmful chemicals like Poly Chlorinated Bi-Phenyles (PCBs) that impact the reproductive and immune system. Similarly, in the Philippines, some of the waste pickers also cut open compressors from refrigerators and air conditioners primarily for the copper. These items contain ester oils, which serve as lubricants. Exposure to ester oils may result in frostbite-like effects, central nervous system depression with dizziness, confusion, poor coordination, drowsiness, unconsciousness or even death. In Smokey Mountain the waste pickers use the oil as grease for rusty metal equipment using only bare hands to handle them.

Many household wastes are also highly toxic, ranging from Mercury in thermometers to empty pesticide containers. The Chintan Study showed that a fifth of the main respondents stated to have picked medical waste and 16% of men have picked up thermometers containing mercury and 6 % children can recall handling or dealing with mercury. Many others were unaware that empty pesticide or even air freshener containers could cause them damage.



Similarly, in Cambodia, wastepickers themselves are seen to undertake trading of many toxic products, such as lead acid batteries. This is obviously injurious to their health, as they often break up the individual components before selling it ahead.

It is well known that burning of wastes releases heat and toxic chemicals. Exposure to heat that is higher than 54oC can cause burns. According to the DOH, overheating of the body can lead to pulmonary edema and circulatory failure. The most common pollutants that are released when burning solid wastes include carbon monoxide, nitrogen oxide, hydrogen sulfide, dioxins and furans and particulate matter. Carbon monoxide may cause asphyxiation; nitrogen oxide, increased respiratory tract infections and asthma and impairs immune responses. Hydrogen sulfide may cause asphyxiation while lower exposure levels may cause chronic kidney and liver disease and injury to the brain. Exposure to high levels of particulate matter may also lead to pneumonia, asthma, loss of lung function and a bevy of respiratory, cardiovascular and cancer-related deaths.

Accidents

Accidents are common in both waste bins and waste dumps or landfills. Dog bites are amongst the most common problem faced in India and Cambodia. Other problems include cuts and lacerations on account of poorly segregated waste, reported everywhere.

On the dumps or landfills, a number of accidents take place routinely. Reports of wastepickers crushed under trucks and bulldozers are not rare. While in India, there is no set system for compensation, we find one in the Philippines, where a private company hauls waste. In such cases, the garbage hauling company pays a certain amount to the family of the victim or the deceased to avoid litigation. Sometimes, another member of the family is offered a job as a palero for Leonel Waste Management Company, the garbage haulers for the City of Manila. In cases of death, the family of the deceased is paid 10,000 pesos (178.57 USD) as well.

Given the unique situation of the Philippines, where the wastepickers pick up the waste in frenzied crowds from trucks when they enter landfills, it is not surprising that most of the waste pickers have experienced being hit accidentally with the kalahig, a sharp picking implement made up of an L-shaped metal rod with a wooden handle and a sharp pointed end. In cases like this, the accepted practice is that whoever hits someone with a kalahig, gives 20 pesos (0.36 USD) to the victim for first aid. This is then followed up with antibiotics which the former also shoulders.

In Cambodia, a similar problem is encountered at the dumpsites. Here, a proposed rule, scheduled to come into force in 2015, calls for a 45 minute gap between the dumping of waste by one truck and another at a given site, to enable wastepickers to work more safely.

Small garbage slides also occur especially during the rainy season. Virginia Yumang and Marietta Ubay, both of whom are sisters, lost their mother after she was buried in a garbage slide in Smokey Mountain. As more and more waste is piled up in heaps this will become even more common.

It is interesting to note that while in India, many potentially explosive objects are retrieved locally from the waste by wastepickers, in the Philippines this is not so and these reach the dump. As a result, wastepickers and their families are in greater danger in India of directly being injured on account of stored waste, while in the Philippines, there are other dangers at the work place. Explosions also occur in the dump, some due to spontaneous combustion coupled with exposure to explosive materials such as aerosols and other pressurized containers. The picture tube of television sets and aerosol cans explode when they are hit resulting in burn injuries.

Fires are also common in the dump sites of Phnom Penh, leading to burns and injuries.

In India, 30.43% men, 43.75% women and 15.38% children recall being hospitalised. 5 out of 7 children and over 10% of adult men get hospitalised due to accidents. A substantial amount of their earnings

is lost due to illness. This is approximately USD 16 among adults and USD 11 amongst children, for each bout.



Children's vulnerability

In all this, it is important to recall that children are particularly vulnerable to both exposure to toxics and occupational health problems. In Cambodia, where 40 to 45% of the wastepicker workforce are estimated to be children, this problem can pose a severe threat to several hundred children that is still underestimated. There are various indicators of this: The Chintan study showed that 84% of all wastepicking children tested were anemic and 17% had chronic gastro-intestinal diseases. About 71% of the children had already been working between 2 and 5 years as waste-pickers. It is obvious therefore that most of these children have been working much of their lives as waste-pickers, thereby being repeatedly exposed to toxics.

Appendix 3 : Space for Waste

Space for Waste: A study

Chintan undertook a year long survey to determine the spatial needs of the informal recycling sector, in collaboration with the sector itself. Here below is a summary of the main findings:

The waste pickers were collecting an average of 69 kg of waste per day.

Those traveling on foot collected the least amount of waste, as little as 40 kilos.

Each small trader was seen to have an average of 7 workers. Of these, 77% maintained that they were not related to the waste dealers.

90% of the workers reported that their working hours varied from 8-10 hours.

Work and residence was centred, with 82% of those interviewed cooking at the same place where they segregated waste or worked. Thus space would have to be provided for segregation and storage of waste, as well as for the living requirements of the associated workers.

Toilets and bathing facilities were extremely limited. 65% were dependent on public facilities such as toilets, taps, and handpumps, while 25% accessed open spaces. The work of this sector was saving the municipality 14-19% of its budget.

In the case of waste dealers, some literacy and numeric skills were necessary and hence, only 23% said they were illiterate. On an average, they had been in business for 11 years although the entire range was from 1 to 42 years.

78% of the small waste traders were running their business on land rented out by private landlords, 95% of the waste traders did not own any vehicle of their own.

Some material could be stored in open space while others would be destroyed in case there was rain. Jute and paper can be stored to greater heights (7 to 9 ft) but require shelter from the rain, while glass and metal occupy half the height (4 to 5 ft) and can be kept in the open. Even though the largest weight of average stock is composed of paper and glass waste, followed by jute. Foam was the biggest problem because it takes up a middle height (5 ft) but occupies a huge floor area (1.9 sq ft/kg), 6 to 9 times more than the other materials.



While average storage is roughly 1500 kg, peak season storage during the monsoons may go up to two to three times as much. But the facilities available to the small waste trader for segregation and storage are pitifully few. While 89% have a couple of bulbs or a tubelight for lighting purposes, only 39% have a fan, 41% have a stove, 30% have access to water supply by handpump or tap, and the weight for weighing purposes is available in 75% of the godowns.

A population of 1 small waste trader per 10,000 population and 1 big small waste trader per 60,000 population must be provided for at the least. Hence, space must be provided in the civic plans for waste segregation and storage at this level and the best place to locate it may be next to the shopping centre so as to ensure maximum visibility, access, and cleanliness. The data generated by this study does give some clues about a set of proposed norms as given below

Norms for Various Sectors in Informal Waste Processing:

Category: Waste pickers
Norm per 100,000 population: 215
Guidelines: Each waste picker handles 60 kg of waste per day and requires 60 sq ft of space near the dhalao for segregation

Category: Other workers
Norm per 100,000 population: 90
Guidelines: Each worker requires 125 sq ft of space near the small waste trader godown for segregation as well as road space for transportation

Category: Small waste traders
Norm per 100,000 population: 6
Guidelines: 3000 sq ft has to be allotted in a shopping centre to each small waste trader for segregation and storage of about 1500 kg of waste, and shelter for workers.

Category: Thiawalas (small temporary buyers directly picking up dry waste or buying it)
Norm per 100,000 population: 33
Guidelines: Thiawalas are located near markets and commercial centres and each thiawala collects waste from 150 shops and establishments daily.

Category: Big small waste traders
Norm per 100,000 population: 1.5
Guidelines: The big small waste traders need storage space of 60,000 sq ft for roughly 60,000 kg of waste which they collect weekly from the small waste traders.

It is therefore possible to conclude that :

There is an immediate need for the city to look anew at the entire informal sector of waste management and devise ways of recognising, appreciating, and strengthening its contribution to civic life.

While planning for a system of waste management, it has to be kept in mind that it not only takes care of the waste but also of those who process the waste.

Although the waste picker is the lowest member of the recycling chain, s/he plays the most important role in it. Waste pickers should get formal recognition and space in the design of civic life.

The Small waste trader is one of the key components in the recycling chain. Majority of the waste pickers is associated with small waste traders. Space requirement is the key issue of small waste traders. A total of 3000 sq ft of total space should be provided for the godown of small waste trader .

Thiawalas operate at an intermediate level between wastepickers and small waste trader. They have "thias" at critical locations in commercial centres and shopping areas. There should be adequate numbers of thiawalas in commercial and shopping areas and for each thia, 20 sq m of space should be provided

Certain planning norms have to be adopted for the various sectors in the informal waste processing.

REFERENCES

INDIA

Chintan Publications

Wasting Away - A Study of Health Status of Waste pickers in Delhi, 2003.

Plastics - Profiting from Pollution - A Primer on Plastics for Everyone, 2003.

Kuda Nahi Kar De Apko Bimar, Karein Kude Ka Sahi Jugad, 2003.

Space for Waste - Planning for the Informal Recycling Sector, 2004.

Kabari Aur Kanoon - Jane Apne Adhikaron Ko, 2004.

Office Matters - A Handy Manual for Reducing every Office's Ecological Footprint, 2005.

Others

Shristi, 2002. *Recycling Responsibility: Traditional Systems and Modern Challenges of Urban Waste Management in India*. A Srishti Report, Delhi

Denison. Richard A. and, John Ruston, 1994. *Recycling and Incineration - Evaluating the Choice*. Island press

CPCB. *Action Points for Managing Municipal Solid Waste Central Pollution Control Board (CPCB)*. Delhi, India

Bureau of Indian Standards, Aug 1997. *Doc. PCD 12 (1170)F*. Delhi, India

ISWA, 1998. *International Directory of Solid Waste Management, Year Book ISWA, 1997-78*

CPCB. *Management of Municipal Solid Waste*. CPCB, Delhi, India.

Government of India, 2000. *Manual on Municipal Solid Waste Management* (First Edition) prepared by Expert Committee, Constituted by Ministry of Urban Development, Government of India, January 2000

Municipal Solid Waste (Management and Handling Rules), 2000

Municipal Solid Waste Recycling Rates: New York City and the United States Comparison and Analysis

Government of India, 1997. *National Plastic Waste Management task Force Constituted by Ministry of Environment and Forests, Government of India August 1997*. Delhi, India

World Bank, 1989. *Private Sector Options for Solid Waste Disposal A Background Survey For Applications In NIGERIA, Urban Development Division Policy, Planning And Research Staff'*, Michael I. Luger The World bank, December 1989, Washington DC, USA

USAID, 1992. *Privatizing Solid Waste Management Services in Developing Countries, Seminar Sponsor: Office of Housing and Urban Programs U.S.Agency for International Development, July 1992*

Government of India, 1999. *Recycled Plastics Manufacture and Usage Rules* Ministry of Environment and Forests, Government of India, 1999

1986. *Report of An Environmental Review of Incineration Technologies, Institute for Local Self-Reliance*. WASHINGTON, October 1986

Centre for Environment Education and University of Agriculture Sciences, 2001. *Report of Integrated Urban Environment Improvement Project, Seminar on Eco-Friendly Approaches For Solid Waste Management-Sharing Experiences, Seminar Organised by: Bangalore Development Authority, Centre for Environment Education &University of Agricultural Sciences, Bangalore, 3-4 March 2001*

1999. *Report of Municipal Solid Waste Recycling Rates New York City and the United States Comparison and*

Analysis. Submitted to: New York City Department of Sanitation Bureau of Waste Prevention, Reuse and Recycling, June 11, 1999

Gol and WHO, 1995. *Report of National Workshop Solid Waste Management, Government of India Ministry of Urban Affairs & Employment In Collaboration with the World Health Organisation, New Delhi, April 7-8, 1995*

1995. *Report of the High Power Committee on Urban Solid Waste Management in India, headed by Prof. B S Bajaj* Member Planning Commission, 1995

1995. *Report on Delhi 's Municipal Solid Waste Management*, June 1995

UNDP, 2002. *Report on Scrape Collectors, Scrap Traders and Recycling Enterprises in Pune*. International Office, UNDP.

1974. *Solid Waste and Community Economic Development: The Institute of Local Self Reliance Experience*.

1999. *Solid Waste Management in Class 1 cities in India*. Constituted by Hon. Supreme Court of India March 1999

Ghosh, Archana, 2000. *Solid Waste Management In Delhi*. Institute of Social Science, Delhi.

NEERI, 1996. *Solid Waste Management in MCD Area*. National Environmental Engineering Research Institute (NEERI) Nagpur

NEERI, nd. *Strategy Paper on Solid Waste Management In India*. NEERI Nagpur, India

2002. *Tamil Nadu Plastics Articles (Prohibition of Sale, Storage, Transport and Use) Act, 2002*

Beede. David N., and David E. Bloom, 1995. *The Economics of Municipal Solid Waste*. The World Bank Research Observer vol.10 no 2, 1995

2001. *The Informal Waste Sector in Egypt: Prospects for Formalisation*.

Chaturvedi, Bharati, and Ravi Agarwal, 1996. *The Waste Situation in India*. A Srishti Report, Delhi, India

D'Souza, Deepika, 1996. *The Web Of Waste Recovery*. Sidney Sussex College.

1994. *Waste Prevention, Recycling, and Composting Options: Lessons From 30 U.S. Communities*. February 1994

World Bank, 1999. *What A Waste, Solid Waste Management in Asia*. World Bank, Washington DC, USA.

Websites and Resources

[www. Median.com/aluminum.html](http://www.Median.com/aluminum.html)

www.atsdr.cdc.gov

www.auburn.edu/administration/safety/MedicalWaste.html

www.cdc.gov/niosh/ipcs/ipcs0073.html

www.chemb.com

www.cpchem.com/k-resin/products/hse_rev_hs.asp

www.environment.about.com

www.erema.at

www.export.gov.il

www.globenet.org/preceup/pages/fr/chapitre/etatlieu/approchr/laang_c.htm

www.chintan-india.org