Urban Waste Picking in Low-Income Countries: Knowledge and Action

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ABSTRACT

A significant segment of the urban population in many low-income countries derives their living from the harvest of marketable materials from urban waste streams. The activities of so-called "scavengers" or waste pickers in many African, Asian, and Latin American cities have also come to be understood to have environmental benefits: the diversion of materials from the urban waste stream decreases the volume of wastes that need to be collected, transported and disposed of. However, due to their daily contact with garbage, these men, women, and children are usually associated with dirt, disease, and squalor. The work of the scavenger is often conceptualized as being poverty driven and undertaken as a survival strategy or coping mechanism in a harsh urban environment.

In recent years, various programs and projects have been developed by non-governmental organizations, religious institutions, community-based organizations, and local governments to address the needs of scavengers. Such intervention schemes are designed in one way or another to alter the scavengers' existing situations.

This study looks at the possible linkages between the evolving understanding of scavenging and the various approaches to intervention that it engenders. This study first examines how scholars and researchers analyze waste picking issues and their suggestions for potential interventions and then relates this understanding to how institutions, citizens, non-governmental organizations, and aid agencies are addressing these issues in practice.

It is found that different conceptualizations of waste picking issues have led to different intervention prescriptions, and that the prescribed interventions are motivated by environmental, economic, or humanitarian concerns. This study contends that the recommended and implemented intervention prescriptions are simply promoting market means in an attempt to achieve humanitarian ends, and, therefore, are only short-term measures that will not solve the identified waste picking issues.

Data sources used in this effort include academic journals, conference papers, case studies of development programs, newspaper articles, Web sites, and field reports. Data were also obtained by contacting researchers and organizations that have studied or are currently working with waste pickers in a variety of geographical settings.

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DEDICATION

TO THE MEMORY OF MY GRANDPARENTS

Chapter 1
Introduction

In recent years, there has been a growing interest in the recovery of materials from urban waste streams. Globally, the average recovery rate of waste paper, for example, increased from 26 percent in 1980, to 42 percent in 1995 (Collins 1997:24). As this figure indicates, interest in recycling[1] is growing rapidly on a global scale. The motives driving this interest, however, differ between high- and low-income countries.

In high-income countries, recycling has come to be viewed as a central strategy for alleviating the pressures that human societies exert on the biosphere. In these countries, a number of justifications for recycling exist: finite natural resources will be saved, air emissions and water pollution will be decreased, and the divergence of materials from the waste stream will reduce the environmental impacts of waste disposal. These justifications embrace an ecological ethic to recycling. In other words, recycling is seen and understood as reducing the risk to health and habitat. This is because, in general terms, high-income countries perceive waste[2] as pollution. Economic incentives imposed by officialdom, such as government regulations and taxes, are used to alter the behavior

[1] As van Beukering and Curlee (1998) note, the concept of recycling has two components: recovery and utilization. Recovery involves diverting materials from the waste stream that are by-products of production and consumption activities. The utilization of waste refers to the processing of the recovered materials into new materials and products.

[2] A clarification of terminology: in casual speech numerous words are used to refer to the by-products of production and consumption. For example, the words "trash" and "garbage" are often used interchangeable. The words, however, have different meanings. Trash refers specifically to discarded materials that are inorganic (dry). Garbage, on the other hand, refers to discarded materials that are organic (wet). The distinction between inorganic and organic was important in the days when city dwellers fed organic material to urban livestock, and wet materials needed to be separated from dry (see Rathje and Murphy 1992). Within the context of the study, however, the term "waste" refers to the by-products of production and consumption, both organic and inorganic, but also includes construction and demolition debris.

patterns of a country's citizenship, or at the very least, encourage people to participate in waste recovery initiatives in societal attempts to limit pollution.

The perception of waste as pollution also exists in low-income countries. Yet, recycling often occurs with minimal government intervention. Recycling initiatives, instead, are a response to industry's demand for material inputs: market forces determine the materials that are recycled (Cointreau-Levine and de Kadt 1991; van Beukering and Duraiappah 1998). This enterprise, sometimes referred to as the "waste economy" (Furedy 1992, 1993) or "recovery industry" (DiGregorio 1994) involves the collection, selling, and manufacturing of goods from waste materials. The recovery industry consists of a network of waste pickers, itinerant collectors, middlemen, and cottage as well as large–scale industry. Because of the sheer number of people who earn a living from waste recovery and recycling, waste in many low-income countries is viewed by certain segments of a society as a resource rather than as pollution.

The perceptions of waste as pollution and waste as resource provides analytical insight into the ecological aspects and economic rationales that influence the primary motivations for waste recovery and recycling. For instance, the perception of waste as pollution in high-income countries has resulted in policies that have been adopted to facilitate the recovery of materials from the waste stream. As noted above, the focus of these policies is resource conservation. Only moderate steps, however, have been taken to implement policies to promote the use of recycled materials in the manufacturing process.[3]

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[3] For instance, the utilization rate for waste paper increased 14 percent between 1980 and 1995 in the United States, whereas in Mexico over the same period the utilization rate for waste paper increased by 43 percent (Collins 1997:24). Yet, the recovery rates for waste paper in each country were similar: in 1995 the United States' recovery rate was 45 percent, and Mexico's was 49 percent (ibid.:24).

The perception of waste as a resource in low-income countries has, as previously noted, led to waste recovery and recycling activities that are driven by market considerations. In many of these countries, the utilization of waste as a resource has had a positive impact on both local and national economies. Moreover, since materials are often recovered from mixed waste, the process is labor intensive and, therefore, creates seasonal, full- and part-time employment for many of the urban poor.

Though not implicitly an objective of the recovery industry, the actors involved in recovery activities are seen as providing an ecological service, through the diversion of market-valued materials from the waste stream. As a result, the inherent notions of waste as a resource or waste as pollution should be understood to run a spectrum, and not remain entrenched as polarities.

The convergence of these two perceptions, specifically the point at which humans interact with mixed or contaminated waste, has social manifestations. Because waste is seen as pollution by large segments of a society, those who utilize waste as a resource come to symbolize this pollution. The perceptions of waste as pollution and waste as resource clash, resulting in waste-based occupations being regarded as "dirty" and, by extension, poverty driven. The social dislocation of those who handle culturally defined waste materials may also be rooted within the social structure of a particular cultural system.

The perceptions of waste as pollution and waste as a resource, therefore, cannot be defined on ecological or economic criteria alone; social philosophies shape these perceptions too. Those occupying the lowest stratum of the recovery industry, people often referred to as "scavengers" (Bubel 1990; de Kock 1987; Tevera 1994) or "waste

pickers" (Furedy 1992, 1993) because of their direct contact with waste, have come to exemplify this negative social image.

Out of this discussion, three waste perspectives are put forward: the first is an ecological view which holds that recycling will conserve resources and reduce the environmental impacts of waste disposal; the second, an economic rationale that concentrates on the market value of waste as a resource; the third, a humanitarian perspective that focuses on issues of social stigmatization and low incomes that affect those who utilize mixed wastes as a survival strategy and coping mechanism.

1.1 Research Problem and Questions

The courses and methods of action that are based on these three perspectives and initiated and implemented by agents of change[4] towards waste pickers are the focus of this study. Interventions that are designed to address urban poverty, environmental management, income distribution, urban service delivery, or the betterment of social welfare will undoubtedly be based on a different conceptualization of the issues. In other words, the nature of an intervention is determined by how a problem is defined. These viewpoints are not mutually exclusive, of course, and, as we will see, the perspectives will often be merged when an agent of change initiates an intervention scheme.

In order to develop an understanding of the courses and methods of intervention which are designed to alter the waste pickers' existing reality, this study aims to

[4] In the context of this study, the principal agents are national governments, regional governments, municipal governments, international donor agencies, non-governmental organizations, community-based organizations, citizens, and religious institutions.

determine if knowledge informs action. Though there are many forms of knowledge[5], within the context of this study, knowledge is defined as the information produced by researchers and accessed through a review of the waste picking literature in English. Action, on the other hand, is defined as the application of an intervention strategy that is intended to alter a current condition that is associated with waste picking in low-income countries, and is undertaken by an agent of change that is empowered and legitimized through societal institutions. Therefore, with these knowledge and action parameters, the study will examine how scholars and researchers analyze waste picking issues and their suggestions for potential interventions and then relate this understanding to how institutions, citizens, organizations, and agencies legitimized by the state are addressing the issues in practice. This study accordingly explores four questions: first, what are the issues and problems that require intervention consideration as identified by scholars? second, what are the recommendations proposed by scholars to address the identified issues and problems? third, what are the range of responses to waste picking by agents of change? and, finally, how are these recommendations and responses realized?

1.2 Research Method and Data Sources

The information that constitutes this study was obtained from a variety of written sources. Secondary data were drawn from academic journals, conference papers, case studies of development programs, newspaper articles, Web sites, and field reports. Data were also obtained by contacting researchers and organizations that have studied or are currently working with waste pickers in a variety of geographical settings.

[5] For example, the knowledge that the waste pickers' themselves possess, and the knowledge that is acquired by agents of change when evaluating an implemented course of action are both forms of

The Internet was the primary research tool. Many research institutions and non-profit organizations are using the Internet to document the projects and the programs that they have undertaken. In a few cases, organizations have established online databases which are intended to inform researchers, policymakers, and the general public about current development trends. These databases were useful for identifying projects and programs designed to impact waste pickers in a number of low-income countries.[6] However, as will be elaborated in the subsequent section, this research method does have its limitations.

In examining and interpreting the secondary data, the analytical technique that was employed was "content analysis." The value of this method is that it allows one to survey and catalogue a large number of opinions and trends. The method further permits one to search for generalizations within the literature. Through the identification of these generalizations, we will be able to consider how the implemented courses of action fit within the context of current thinking on resource recovery and waste picking in low-income countries.

1.3 Scope and Limitations of the Study

Like all research tools, the Internet as a method of data acquisition has its limitations. For instance, for an organization to have access to Internet technology, that organization must have a certain level of working capital that can be spent on the technology as well as on publicizing the organization's mandate and work. In addition, the organization must either be able to employ at least one person with the technical

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knowledge useful for interpreting the issues associated with waste picking.

prowess to properly use and maintain the technology. These financial constraints limit the number of organizations able to use the Internet to promote themselves. As a result, only the larger agents of change that receive funding from international donor agencies, governments, or the private sector are in a financial position to continuously communicate with a global audience.

Research agendas can also influence the diffusion of information. Some organizations, for instance, promote their work through online databases that are run and maintained by research institutions. To have their work documented in these databases, the accomplishments of a given agent of change must complement the research agenda of the database provider. For example, a research centre that primarily does work on urban service delivery and infrastructure provision in low-income countries may operate an online database. Due to the centre's research agenda, the online database is arguably a means of publicizing initiatives that fall within the boundaries of this research agenda. The result is that projects and programs that fall within the disseminator of information's research agenda will be selected and publicized instead of those that do not.

This line of reasoning regarding the diffusion of information can also be applied to the databases run and publications disseminated by international development and aid agencies. For example, a number of case studies presented in this study were drawn from the "Best Practices for Human Settlement Database." This database is operated by the Together Foundation in collaboration with the United Nations Centre for Human Settlements (UNCHS, Habitat) and is intended to promote global dialogue and communication about the implementation and continued operation of "successful" development projects. One must ask, however, how does a specific project in a specific

[6] Appendix A contains a list of URL's (Uniform Resource Locators) of referenced on-line sources.

country come to be promoted as a "best practice?" And, further, what are the defining characteristics of a "best practice?" The disseminators of information, in other words, the database providers, do not furnish a clear definition of what a "best practice" is. One may advance the notion that political agendas assist in determining which projects in certain countries are recognized as "best practices." Nations that are following the development agenda of UNCHS (Habitat) will undoubtedly be marketed over others that do not.

The data that were obtained, specifically with regard to the 19 intervention projects and programs discussed in Chapter 4, was without doubt influenced by a nation's political structure. Table 1.1 lists the reviewed agents of change discussed in Chapter 4, and the countries in which they operate. As the table shows, 8 of the projects reviewed operate in India. In the case of post-colonial India, the nation's political and institutional framework allocates political space for agents of change. Such political space also exists in Colombia, Brazil, and the Philippines. As a result, civic institutions are able to negotiate their way through the *de jure* institutional environment. In other words, there is room within the political arena for civic institutions that are pursuing "conventional" development agendas. Agents of change operating in a political environment that provides them with political space in which to maneuver will often pursue "mainstream" development programs while being in a position to publicize their causes on the international stage. The outcome for a researcher employing the Internet as a research tool is that neither a sample nor a total compilation of cases can be acquired.

Table1.1: Geo-Political Location of Reviewed Case Studies

Agent of Change	Country
Superintendency of Public Cleaning (SLU)	Brazil
Excellent Novel and Radical (EXNORA)	India
CEE South	India
Cooperativa Recuperar	Colombia
Brazilian Recycling Commitment (CEMPRE)	Brazil
Sociedad de Seleccionadores de Materiales (SOCOSEMA)	Mexico
Saleng fund project	Thailand
Fundación Social	Colombia
Urban Cleaning Municipal Company (EMLURB)	Brazil
Vincentian Missionaries Social Development Foundation, Inc.	the Philippines
Jeevodaya	India
Ahmedabad Municipal Corporation	India
All India Institute of Local Self Government (AIILSG)	India
Undugu Society	Kenya
Garbage Recycling and Segregation Programme (GRASP)	India
Rag pickers' Education and Development Scheme (REDS)	India
Street Kids International	India
UNICEF	Brazil
Women's Balikatan Movement	the Philippines

In an effort to overcome the limitations of the research tool, an attempt was made to identify and directly contact organizations. This, however, resulted in other limitations. The identification of organizations required that key informants be solicited for information. More often than not, the informants who were identified worked in research institutions or for international development agencies. Therefore, they were only aware of the larger programs and projects that fell within the scope of their research specialty, which as noted above is determined by the research environment in which they operate.

The few "grassroots" organizations that were identified and directly solicited for information were wary of providing it. This might be because these organizations operate with a limited number of staff and, due to financial and time constrains, and due to the numerous number of requests for information they receive, were unable to respond. Another reason for the organizations' wariness is the fact that when these organizations provide information to researchers, the findings of the study are often not shared with the organizations (Furedy, personal communication). Another difficulty in attempting to directly communicate with grassroots organizations in a variety of geo-political settings was that linguistic obstacles were encountered. This too influences the data set.

A further limitation of this study is that the literature and the case studies that the study is based on are restricted to the English language. In addition, the knowledge that is reviewed in Chapter 3 was derived entirely from scholars and researchers publishing in the English language.

The result of these combined constraints was that, first, a much smaller number of cases covering specific intervention schemes were obtained than initially anticipated, and second, it is unclear if an accurate overview of the range of intervention responses was acquired. The majority of the case studies that are reviewed in this study have received some form of promotion by scholars, research institutions, international development agencies, or at major conferences and workshops.

As a result of the manner in which the research was conducted and of the accompanying limitations, it is impossible to determine, with accuracy, the complete range of intervention responses initiated by agents of change. And, therefore, this study will not attempt to do so. Rather, this study will work around these limitations by

building a framework of knowledge and action. Such a framework will bring to the fore the ideological or waste perspectives that shape the prescriptions for intervention. An overview of publicized development programs and projects will assist in meeting this purpose. In addition, this study will focus on collaborative ventures between governments and other agents of change. This is because much of the information that is being publicized is intended to promote neo-liberal political and economic principles. With this framework for analysis, we turn our attention to an overview of the chapters.

1.4 Organization of the Chapters

The following chapter (Chapter Two) introduces the factors and actors that constitute the recovery industry. The chapter begins with a general discussion of the recovery industry. This discussion will show that the recovery industry is considered from waste management, environmental, labor, economic, market, and exploitation points of view. This will be followed by an identification of the actors who operate in the recovery industry. The chapter will conclude with a general discussion of scavenging.[7]

Chapter Three reviews the academic literature on waste picking. The intent of this review is to draw out major themes found in the literature. These discussions will assist in identifying the issues that warrant intervention considerations. The chapter also examines the reasons why people pick waste. The chapter concludes by discussing recommendations that have been put forward by scholars to assist waste pickers.

[7] Within the context of this study the terms "scavenger" and "waste picker" are used interchangeably; however, the author prefers the term "waste picker" because it is more useful in defining the labor process. In addition, in some Asian societies the word "scavenger" is reserved for those who are involved in the collection of night soil (Ali 1994; Bindeshwar 1991). Nevertheless, when quoting or expressing the fundamental idea of a particular scholar, the term "scavenger" will appear in the text if that is the term used by the scholar.

Chapter Four looks at current courses of action that have been initiated by agents of change. The chapter begins by reviewing broad categories of interventions. This is followed by the development of a framework for classifying intervention approaches. An examination of current intervention trends assisted in developing the categories of the framework. The chapter ends with a description of a number of case studies. This discussion is intended to illustrate the range of intervention approaches.

In the final and concluding chapter (Chapter Five), the findings of this study are reviewed. Instead of concluding with a list of untested and therefore hypothetical recommendations, the study ends with a discussion of some of the implications of particular courses of action.

Chapter 2
The Factors and Actors of the Recovery Industry

The phrase "recovery industry" describes the industry that deals with the recovery of post-consumer or secondary materials, which are the overall terms for the non-hazardous recyclable and reusable materials of market value that are derived from a city's solid waste stream. In order for such an industry to develop, however, three conditions must exist: there must be a market demand for post-consumer materials; there must be a continuous supply of these materials of marketable quality; and finally, there must be a group of people willing to undertake such work (Sicular 1989).

The majority of low-income countries meet all three of these criteria. The high prices for virgin raw materials coupled with the growth of industry in many of these countries have created a market for post-consumer materials. The emergence of a consumer class, whose lifestyles of consumption have changed the composition of the urban waste stream, has created a continuous supply of secondary materials. Finally, rapid social change has resulted in the dislocation of certain segments of a society, which has contributed to a portion of the population willing to perform such work.

In low-income countries, the recovery industry is considered from waste management, environmental, labor, economic, market, and exploitation points of view (Lohani 1984; Baldisimo and Lohani 1988; Bubel 1990; Furedy 1984; Baud and Schenk 1994; Sudhir *et al.* 1996; van Beukering 1994; Medina 1997). For these reasons, it is worthwhile to begin the discussion of intervention approaches in waste picking with an examination of the various considerations regarding the recovery industry.

2.1 Waste Management Considerations

According to waste management experts (van de Klundert and Lardinois 1995), the recovery industry is responsible for reducing and transforming waste by diverting materials from the waste stream. Table 2.1 lists the potential waste management benefits derived from the recovery industry.

Table2.1: Potential Waste Management Benefits of the Recovery Industry

The recovery and reuse/recycling of materials that would otherwise end up in the urban waste stream
The handling of large volume of material at no or marginal cost to the municipal government
Reduction of the amount of waste materials requiring collection and transportation
Extension of the lifetime of sanitary landfills, through the reduction of throughput
Provision of waste removal and sanitary services to otherwise unserviced sectors of the city
Provision of services at no cost to municipality

Adapted from van de Klundert and Lardinois (1995)

As Table 2.1 shows, the recovery industry is viewed as reducing overall municipal waste management costs by decreasing the volume of wastes that need to be collected, transported and disposed of. The industry is, therefore, considered to serve an urban environmental management function: the saving of landfill space and extension of landfill life. Though exact figures do not exist, Sudhir *et al.* (1996:163), for example, contend that the actors operating in the recovery industry reclaim approximately 20 percent of an average large city's waste stream in India. More specifically, in Bangalore (India), it has been estimated that waste pickers reclaim approximately15 percent of the waste from the city's waste stream (Baud and Schenk 1994), whereas the recovery rate in Hanoi (Vietnam) has been calculated at 17.5 percent (DiGregorio 1997:3). As noted above, these figures should be taken as representative rather than exact since the recovery industry is not monitored and precise statistical data regarding the role it plays in urban environmental management are difficult to quantify.

2. 2 Environmental Considerations

From an environmental management perspective, the recovery industry aids in reducing the environmental impacts of the manufacturing industry. Environmental benefits are derived from substituting secondary materials for virgin materials in the manufacturing stages of production. Table 2.2 shows the potential benefits of recycling.[8] As the table shows, the possible benefits include the reduction of energy use, the reduction of air pollution, the reduction of water pollution, and the reduction of water use.

Table 2.2: Potential Environmental Benefits From Substituting Secondary Materials for Virgin Resources

Environmental Benefits	Aluminum	Steel	Paper	Glass
Energy use	90-97%	47-74%	23-74%	4-32%
Air pollution	95%	85%	74%	20%
Waste pollution	97%	76%	35%	--
Mining wastes	--	97%	--	80%
Water use	--	40%	58%	50%

Source: Bartone (1990:18)

2.3 Labor and Economic Considerations

From a labor perspective, the labor-intensive nature of the recovery industry provides seasonal as well as full- and part-time employment. It has been estimated that in low-income countries approximately 2 percent of the urban population earn a living by harvesting the waste of the more affluent, top 20 percent of the urban population (Bartone 1988:3-4).

Local economic benefits include the supply of post-consumer materials to the manufacturing sector and the provision of income-generating activities. From this point

[8] Some of these benefits listed in Table 2.2 occur due to the use of state-of-the-art technology. For instance, research has shown that paper production in China requires 20 percent more energy than it does in

of view, the recovery industry is conceptualized as having a positive impact on local economies. In fact, Bromley (1997) asserts that waste recuperation activities are a form of tertiary production in the sense that the labor process is sustaining the output of the manufacturing industries. That is, the actors in the recovery industry are servicing secondary producers through the provision of industrial inputs that take the form of post-consumer materials. This helps in reducing the production costs of industry. For example, it is seven times cheaper for Mexican paper mills to purchase cardboard from waste pickers than to use imported U.S market pulp (Medina 1997:278). Waste pickers are also providing cottage enterprises with secondary materials, which, in turn, supply the urban poor with inexpensive products.

2.4 Market Considerations

Research has shown that the recovery industry is linked to the global economy (Medina 1997). In other words, global structures impact the availability and, hence, the prices paid for secondary materials. For instance, the collapse of the Soviet Union in 1989 resulted in the country going into a recession. One consequence was a drop in the domestic demand for aluminum, causing Russian aluminum manufactures to export their product. The result was a surplus of aluminum on international markets, which on a global scale drove down the price of aluminum. This impacted the recovery industry in Mexico, for example, by reducing the domestic demand for aluminum and lowering its price (ibid.:226).

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industrialized countries. This is due to the use of obsolete, poorly maintained industrial technology (Lenssen 1993).

Local demand can also boost the market price of post-consumer materials. For example, the 1992 strike involving mill works in British Columbia (Canada) raised the price of wood pulp. Rather than paying the higher prices for pulp demand on international markets, Mexican paper mills raised the price that they paid waste pickers for cardboard (ibid.:223). Moreover, certain post-consumer items that are harvested by waste pickers are sold on global markets. For instance, chicken bones harvested by waste pickers in Hanoi (Vietnam) are sold in Italy as calcium supplements (DiGregorio 1993, cited in Douglass 1998). From this viewpoint, the recovery industry is seen as contributing to the global economy.

2.5 Exploitation Considerations

Though the recovery industry is conceptualized as being a generator of employment, many of the economic and labor activities are considered exploitive. Following this line of argument, Birkbeck (1978, 1979) maintains that scavengers are exploited by industry. He bases this perception on research conducted in Cali (Colombia) in the mid-1970's. Birkbeck's research pointed out that scavengers supply secondary paper, harvested from Cali's solid waste stream, *via* buyers and middlemen to paper mills. According to Birkbeck, scavenging is piecework, and a network of middlemen control the prices paid for secondary materials. Industry benefits by not having to abide by minimum wage laws, nor do they have to follow occupational safety regulations. The result is that the incomes and working conditions of scavengers are poor.

From this standpoint, many recovery industry occupations are characterized as unregistered and unregulated, labor-intensive activities carried out by individuals and/or

micro-enterprises that operate on a small-scale, and with minimal capital input (Furedy 1990). Because of these characteristics, the majority of the actors operating in the industry are equated with the so-called informal sector, and, therefore, are considered, poor, exploited, and harassed by officialdom.[9] These actors are perceived to be motivated by survival and only undertake waste recovery occupations, such as waste picking, as a coping mechanism in a harsh urban environment with limited opportunities (van de Klundert and Lardinois 1995). This point of view asserts that a number of the industry's occupations are only taken on as a "last resort" when no "legitimate" employment opportunities exist (de Kock 1986).

The waste management, environmental, exploitation, market, labor, and economic considerations presented above are used to frame intervention approaches in waste picking. What the considerations allow for are the proposal of intervention recommendations that promote certain political and development agendas. Briefly stated, the considerations are used to advocate for poverty alleviation, and the deregulation and privatization of public services. How these agendas are played out will be discussed in the final chapter of this study.

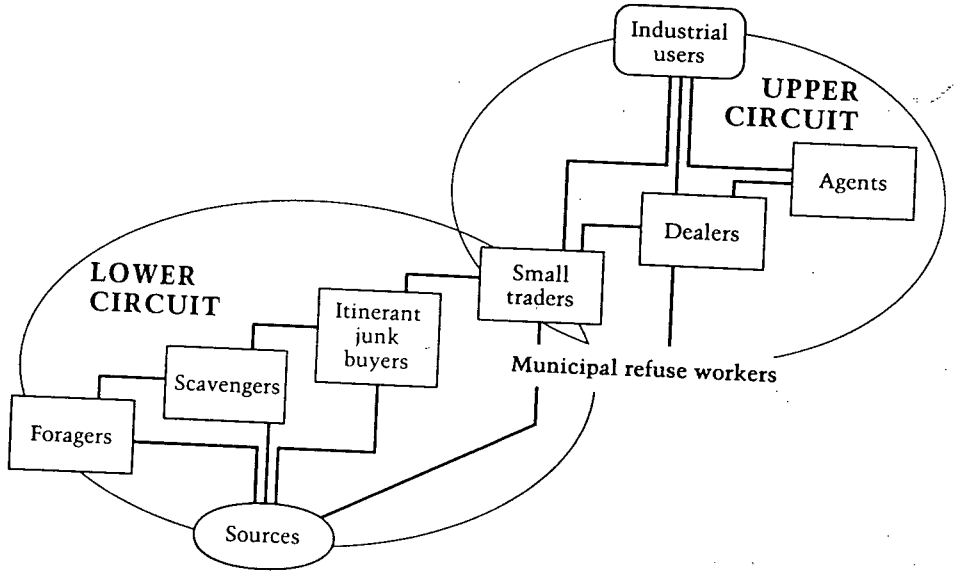
2.6 Defining the Actors of the Recovery Industry

DiGregorio's (1994) assessment of Hanoi's (Vietnam) recovery industry assists in illustrating the relationships between the various actors that constitute the industry (see Figure 2.1). The actors in the "lower circuit" are responsible for the collection of post-consumer items, whereas the actors in the "upper circuit" are associated with the trading

[9] For insightful critiques of the informal sector concept see Bromley (1979) and Peattie (1987).

and processing of these materials. The two circuits illustrate a labor-intensive procedure of gathering, purchasing, transporting, and processing of post-consumer materials. What emerges is a web of relationships that determines who has access to materials for recovery and how the materials are processed. As Figure 2.1 illustrates, material production is organized as a hierarchy that consists of three general classifications: primary producers, middlemen and consumers of recovered materials. As the recovered materials move through each stratum, value is added to the secondary items.

Figure 2.1: Upper and Lower Circuits Within the Resource Recovery Industry (DiGregorio 1994:8)



As the figure illustrates, waste recovery, as a labor process is multifaceted with numerous categories of actors. These categories are determined by the method of recovery, by the point of access to the waste stream, by the time devoted to picking, and by the intended use of recovered post-consumer materials.

The first form of waste recovery is picking for self-consumption. In this type of waste picking, people recover post-consumer items such as clothing, food, building

materials, appliances, or any other items that they can use to meet their personal needs, from mixed wastes. There is no monetary exchange in the reclamation of these items, and all items recovered are for self-consumption. This activity can either be undertaken full- or part-time. Those undertaking waste picking that is self-consumption oriented, on a part-time basis may, for example, have a steady employment, and may spend as little time as five minutes a day rummaging through mixed waste in the pursuit of items of personal value. Those undertaking waste picking for self-consumption, on a full-time basis, are often referred to as "foragers," and are waste picking as a hand-to-mouth survival strategy.

Public or private refuse collectors undertake another type of part-time waste picking. These collectors remove any items of value from mixed wastes, whether for personal consumption, or for resale. Because of their easy access to the solid waste stream, refuse collectors often only harvest the post-consumer materials that will give the highest economic returns when sold. In fact, in a number of Mexican and Colombian cities, refuse collectors pay their supervisors in order to be assigned to collect waste in affluent neighborhoods. Because of consumption patterns, the waste stream in these neighborhoods contains more items with market value (Medina 1997). Hence, public and private refuse collectors supplement their income through the collection and sale of post-consumer materials.[10]

Other urban actors also undertake waste recovery for financial gain. Individuals not involved in refuse collection harvest, from mixed waste, post-consumer items of

[10] Milke and Aceves (1989) maintain that in the Federal District of Mexico, which comprises most of metropolitan Mexico City, public refuse collectors can, at the very least, double their take home wage by recovering secondary glass, paper and scrap metal from the city's solid stream. Similarly, in Bangkok, Thailand, refuse workers reportedly spend 40 percent of their time recovering secondary items from the

market value, such as paper, aluminum cans and copper. The primary motive for collection is the resale to middlemen, cottage industries, or factories.

Once again, this form of waste recovery can be undertaken on a full- or part-time basis. An example of this type of part-time waste recovery is, for instance, a school child who picks through mixed wastes a few hours a week in order to earn extra household income. Those undertaking waste recovery on a full-time basis consist of individuals who pick through mixed wastes either at a dumpsite or on the street. Individuals undertaking this form of resource recovery are commonly referred to as "scavengers" or "waste pickers." These individuals will not have "permanent" full-time employment that pays them a wage, and the majority of their income is derived from waste picking. It has been estimated that full-time monetary waste pickers will work approximately 40 hours per week (Birkbeck 1978, 1979; de Kock 1986; Tevera 1994). Full-time monetary waste pickers may also specialize in the collection of a particular post-consumer material, such as cardboard or duck feathers.

As noted above, there are two kinds of full-time waste pickers: dump and street. What differentiates these two forms of picking is the point at which each form accesses the solid waste stream. Dump pickers forage for post-consumer materials at the end-of-the-pipe, either at public or private landfills. Street pickers, on the other hand, forage for saleable materials from mixed wastes at various points along the solid waste stream, such as trash bins, at transfer stations, in refuse collection carts, and along roadways. In order to gain access to the waste stream, waste pickers may make informal arrangements with refuse workers, through which labor is exchanged for the right to collect post-consumer

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waste stream. By investing time in resource recovery, refuse workers can more than double their official salary (Pollock 1987:36).

materials (Birkbeck 1978; Furedy 1990). Alternatively, they may have to pay municipal authorities in order to gain access to waste materials (Haynes and El-Hakim 1979; Sicular 1989; Tevera 1995).

In contrast, Itinerant collectors acquire post-consumer materials by going from door-to-door: to households, to offices, and to institutions (Furedy 1990). Because they collect uncontaminated secondary materials at the source, the items often have a higher sales value. These post-consumer items are acquired by purchasing them or through bartering. In addition, unlike the other categories listed above, itinerant collectors have a distinct relation to capital. This relationship, which is manifested through the extension of credit, allows itinerant collectors to concentrate their attention on materials of higher value; it may also tie them to middlemen and small traders (DiGregorio 1994). This can result in itinerant collectors specializing in certain materials.

Though not directly involved in the picking of wastes, dealers and wholesalers play a central role in the recovery industry. Dealers act as liaisons between waste pickers, itinerant collectors, refuse workers, wholesalers, and industry. In order to ensure a constant supply of secondary materials, dealers may need to form reciprocal relationships with waste pickers, itinerant collectors and refuse workers. Such relationships may be established through the provision of gifts and loans, or by offering higher unit prices than other dealers.[11] Dealers also pay cash for recovered secondary materials and may employ a small number of people to sort the purchased secondary materials. These operational costs require dealers to have working capital.

Wholesalers, on the other hand, collect and process large quantities of post-consumer materials, from dealers. Some wholesalers may specialize in the collection of

one particular secondary material. Wholesalers prepare the recovered materials for use as industrial inputs by sorting, cleaning, and transporting the materials to industry. This requires wholesalers to have a considerable amount of working capital, in comparison to others in the resource recovery industry. Like dealers, wholesalers pay cash for recovered materials, and wholesalers may also provide loans to dealers in order to tie them to the wholesaler. In addition, wholesalers maintain a payroll by employing truck drivers and warehouse workers to carry out the tasks of sorting, cleaning, and delivering the recovered materials. Moreover, wholesalers must invest in fixed capital, such as trucks and scales as well as land and storage facilities.

Unlike the other actors in the recovery industry, wholesalers do not receive immediate payment when they sell secondary items to industry. Rather, wholesalers may wait for several weeks or even months for payment (van Beukering 1994). This gap in time between delivery and payment, combined with the other factors listed above, requires wholesalers to have extensive working capital. The requirement of working capital limits the number of entrepreneurs attempting to establish themselves as wholesalers.

It should also be noted that the types of resource recovery outlined above are not completely distinct categories; for example, a street picker may exchange his or her labor, by cleaning an office, in order to gain access to a business's discarded paper (Huysman 1994a). Alternatively, family units may, for instance, be concurrently involved in various types of waste picking activities. In Hanoi (Vietnam), mothers operate as itinerant collectors while their accompanying children forage through mixed wastes on the street (DiGregorio 1994).

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[11] This point is elaborated on in Chapter 3.

All of the types of resource recovery activities listed above play important roles in a city's recovery industry; however, this study will primarily focus on full-time or "permanent" waste pickers who are involved in the collection of post-consumer materials from mixed wastes at street level or from dumpsites. The focus is on this particular resource recovery actor because as Birkbeck has stated, "the garbage picker is the most visible component of a large system, characterized by the sack he [or she] carries with him [or her]" (1979:164). This visibility combined with the competing perceptions of waste as pollution and waste as resource raise social, economic, occupational health, and ecological concerns for social activists, scholars, and civil servants alike. Because of these concerns waste pickers tend to be the target of intervention schemes initiated by agents of change, or at the very least indirectly impacted by changes made to the recovery industry. In order to develop a better understanding of the societal position of waste pickers, we turn our attention to a brief historical overview of those who derive a living from the harvesting of post-consumer materials from the urban waste stream.

2.7 Scavengers and Waste Pickers

Terms such as "trash picker," "garbage picker," "rag picker," "bone-grubber," "sweeper," and "rag and bone men," have been used to describe those involved in the collection of post-consumer materials from a city's solid waste stream. In the English language development literature, however, the most prevalent term used to depict those involved in this type of waste recovery is "scavenger." Blincow (1986:97) has defined scavenging as:

> ...the activity involved in the collection and disposal of culturally-defined waste materials, whether that activity be done directly for subsistence (food, clothing, and artifacts), for exchange, for sale, or for wages–or, as is sometimes the case , for some combination of these.

The term has come to describe those who view some post-consumer residues reclaimed from the urban waste stream as having economic worth (Birkbeck 1978; Poerbo *et al.* 1984, Tevera 1994; de Kock 1986). Sicular maintains that scavengers do not treat "waste as waste," but rather they treat "waste as ore" (1989:13). In other words, the scavenger views certain by-products of production and consumption not as pollution but as a resource.

Scavengers have long been characterized as the poorest of the poor. This characterization has resulted in scavengers being perceived as vagrants, criminals and even as garbage itself (Rebong and Ekna 1979; Fernandez and de la Torre 1986). The social stigma that accompanies scavenging is not entirely based on the economic returns of scavenging.[12] Rather, it is attributed to their association with culturally defined waste products. "Because scavengers directly handle wastes, they are subject to the taboos associated with wastes" (DiGregorio 1994:4). This social connotation is reinforced through discourse in other ways. Words such as "vultures" (Colombia), "ants" (Toyko) and "flies" are local pejorative names used to describe those who collect secondary materials from waste (Bubel 1990).

Historically, in many complex socio-cultural systems, those undertaking scavenging activities have been from the lower strata of the society, from such marginalized groups as gypsies, heretical religious sects, ethnic minorities, untouchables

[12] As Lohani (1984), Bubel (1990) and Medina (1997) maintain, scavengers may earn more and have a higher standard of living than those employed in the so-called formal sector (see Chapter 3).

and immigrants (Blincow 1986, cited in Sicular 1989).[13] This culturally defined division of labor often acts as a social barrier, prohibiting certain groups from finding alternative or more "legitimate" employment.

With the introduction of industrial capitalism to the Third World, an augmented market for post-consumer materials was developed. This was largely due to a scarce supply of raw materials for industry. The result has been an intensification of scavenging activities. Other factors have also lead to this intensification. These factors include the implementation of economic policies which have made more indigenous means of earning income obsolete, easier movements between rural and urban areas, and changes in consumption patterns (Bubel 1990). In many contemporary societies, however, the low status and social stigmatization associated with waste occupations are still prevalent.

This discussion is intended to illustrate a central point: in low-income countries certain segments of urban society view waste as a resource Because of their presumed socially dislocated position within a society and their association with waste, waste pickers have come to exemplify the recovery industry. As will be discussed in succeeding chapters, this has resulted in waste pickers being the target of intervention schemes that are either based on the perception of waste as a resource, or alternatively, on the perception of waste as pollution. With this frame of reference we can know turn or attention to a discussion of intervention strategies that impact the recovery industry in general and waste pickers in particular; however, before investigating specific courses of

[13] The *eta*, of have lived in Japan since approximately the tenth century, are one such example of an outcaste group. Historically, the *eta* were associated with ritually polluting work such as leather tanning, killing of animals, street sweeping and scavenging (Hane 1982). In Cairo, Egypt, Coptic Christian immigrants known as the *zabbalin* have been responsible for the collection of refuse from certain city districts since the 1930's, and maintain a customary right to the city's waste (Meyer 1987; Assaad 1996).

action it is worthwhile to review the academic literature on waste picking. This review will assist in identifying issues that warrant intervention consideration.

Chapter 3
The State of Knowledge

In the previous chapter, the structure of the recovery industry, and the actors who derive a living from recycling and waste recovery activities were discussed. In this chapter, the academic literature on waste picking will be reviewed. The majority of academic studies referred to in this study have a socio-anthropological perspective. The studies are often descriptive in nature, and are designed to develop "life profiles" of the waste picking population under investigation. Therefore, the case studies aid in the development of an understanding of the needs of waste pickers. The purpose of this review is not to summarize the specific findings of a given case study; rather, it is intended to draw out general themes and common issues that warrant intervention consideration.

This chapter will begin with a discussion of the academic perspective on why people pick waste. This discussion will attempt to move beyond a supply-and-demand explanation, which is rooted in neo-classical economic thought. It will be argued that other factors assist in the production of the conditions that compel people to pick waste. Here we will discuss various conceptualizations of poverty and apply these theories to our examination of waste picking. This discussion of poverty concepts is useful since it provides analytical insight into the social processes that create the conditions of poverty, and therefore will aid in explaining the existence of waste picking.

After discussing the relationship between urban poverty and waste picking this chapter will turn its attention to an overview of waste picking issues. Though the academic studies of waste picking focus primarily on the specific economic, social, and

cultural contexts of a particular city, this review will reveal common themes that transcend cultural, social, and geo-political boundaries. The review will also aid in the identification of major points of continuity as well as points of contention within the academic literature. The chapter will conclude with a discussion of recommendations put forth by scholars to address the identified issues that warrant intervention.

3.1 Conceptualizing Why People Pick Waste

As the discussion in the previous chapter on the recovery industry established, people pick waste because there is a market demand for certain post-consumer materials. And as has also been discussed previously, those who have historically been involved in the picking of waste as an occupation have come from the lower strata of a society. It was noted that this socially defined division of labor might prevent these "marginalized" segments of a society from finding "legitimate" employment. In contemporary urban societies, as we shall see, waste picking is conceptualized as a refuge occupation that exists because of a demand for secondary materials coupled with underemployment; however, social processes also contribute to the existence of the occupation.

The majority of the academic literature attempts to explain the existence of waste picking as an occupation through an examination of unemployment. In discussing the occupational nature of waste picking in Manila (the Philippines) Keyes has written:

> When unemployment is high and when men of limited education and skill find no alternative, they will resort to this marginal occupation as a sure means of livelihood for their families. It does constitute a last resort in the absence of any other immediately available employment opportunities (1982:18).

In a similar vein, Tevara maintains that in Harare (Zimbabwe), waste picking is a manifestation of the unemployment problem. He has noted that waste picking is a

"survival activity engaged in by unskilled urban people who have been unable to secure employment in the formal sector" (Tevera 1995:94). This view is shared by de Kock:

> The phenomenon of people scavenging and living off garbage dumps is found worldwide, especially in the developing world. Where urbanisation rates greatly exceed the rate of job creation, formal employment opportunities are limited, and unemployment benefits inadequate, significant numbers of urban dwellers [who] are forced to seek some other survival strategy (de Kock 1987:52).

These scholarly explanations reflect that waste picking is an economic adaptation to an urban environment with limited options; as Abad (1991:264) put it in his assessment of the people who make up the Smokey Mountain waste picking community in Metro Manila (the Philippines), they must "scavenge or starve." A number of case studies indicate that people resort to waste picking during economic downturns (de Kock 1987; Birkbeck 1978). This suggests that under certain conditions, waste picking is a survival strategy undertaken as a "stopgap" measure. In other words, picking waste as an income earning strategy is conceptualized by these scholars as a coping response of the urban poor to a shortage of employment opportunities. Within the academic literature, this conceptualization of the reason why people pick waste combined with the fact that some people view waste as a resource has resulted in waste picking being linked to poverty.

In discussing the connection between waste picking and poverty, Medina has written, "the poverty prevalent in most developing countries forces the poor to make the most of the resources available to them. Given their low incomes, scavenging provides them with reusable and saleable materials" (1997:129-130). He goes on to state that "scavenging represents an adaptive response to chronic poverty prevalent in developing countries" (ibid: 134). Since waste pickers have come to exemplify poverty, it is worth

reflecting on the various concepts of poverty, with the hope of developing a better understanding of this market-driven, yet socially stigmatized occupation.

The concept that has come to dominate discussions on the subject of poverty by governments and international development agencies is the "basic needs" hierarchy. This has resulted in poverty being solely defined by some type of monetary measure, such as a poverty line. The failure of this method of conceptualizing poverty is that basic needs abstractions have come to reduce poverty to a mere question of income equivalencies of what constitutes basic needs. This practice has resulted in the development of homogeneous characteristics that come to stand for the consumption needs and the priorities of all segments of a society. This way of measuring poverty, *inter alia*, omits the fact that the urban dwellers may have different preferences than those characterized in the basic needs hierarchy. For instance, poor households may spend less on subsistence, in order to financially meet such life cycle responsibilities as weddings, funerals, birthdays, and anniversaries. Since these life cycle events are not simply patterns of consumption, the basic needs hierarchy is not equipped to take these reciprocally-oriented activities into account.

A further shortcoming of the basic needs poverty concept, as it directly relates to this discussion, is that it does not explain the underlying causes of poverty. As the discussion below elaborates, poverty is a social process, and, as a result, cannot be defined by economic criteria alone. When poverty, as it relates to waste picking, is examined from this perspective it can no longer be viewed merely as an income-earning activity.

In general, academic writing proposes two broad perspectives in attempts to explain poverty as a social process. One perspective argues that the poor are unable to improve their lot in life because of apathy and socialization. The second maintains that the will to achieve exists but the opportunities to improve do not. In the housing literature, Stokes' (1962) classification of "slums of despair" and "slums of hope" parallel this dichotomy. We will extend this discussion from the popular housing literature to the recovery industry and waste picking by adopting the following expressions: "garbage of despair" and "garbage of hope." It should also be noted that recent studies have indicated that in explaining poverty the two perspectives cannot be understood independently; they, in fact, reinforce one another. This point will be discussed in further detail in subsequent sections.

3.1.1 Garbage of Despair

Oscar Lewis' (1966) "culture of poverty" thesis articulates the "garbage of despair" premise. Briefly stated, Lewis proposes a culturalist explanation to account for the behavior of the poor. He argues that the persistence of the condition of poverty is due to the culture of the poor, which is a response to industrial capitalism. According to Lewis (1966), the following societal conditions contribute to the culture of poverty: a cash-economy based on production for profit and wage labor, low wages, a constantly high rate of underemployment and unemployment for unskilled labor; the inability of governments and their citizenship to provide social, economic and political organization for society's poor; and finally, a societal value system that stresses the accumulation of wealth.

"The most likely candidates for the culture of poverty are the people who come from the lower strata of a rapidly changing society and are already partially alienated from it" (Lewis 1966:xlv). The causes of poverty which include lack of education and underemployment result in a daily struggle to meet basic needs. Those trapped in these conditions come to accept their marginal position within a capitalist society, and, as a result, seldom invest in ways that would improve their socio-economic status. This "way of life" is passed on from one generation to another, through values, norms, and behaviors, and becomes self-perpetuating.

3.1.2 Garbage of Hope

The "garbage of hope" thesis has a different perspective on the concept of poverty. This thesis shifts its attention from poverty as a "way of life" to the dynamic coping mechanisms and survival strategies employed by the poor. According to this argument, those involved at the lowest strata of society are trying to improve their position in life. The behavior of the poor is determined by economic conditions instituted by societal structures (Eames and Goode 1988). The difference between the values and behaviors of the poor, and those of the dominant classes, is a result of the inability of the poor to achieve the overarching goals of society, such as education and the accumulation of wealth, because of their economically and socially disadvantaged position.

In addressing misconceptions about the urban poor, Perlman has written that the poor "have the aspirations of the bourgeoisie, the perseverance of pioneers, and the values of patriots. What they do not have is the opportunity to fulfil their aspirations" (1987:187). This structuralist view maintains that the urban poor are hard-working,

productive and would like to improve their lot in life. However, they are constrained and trapped by the political and the economic structures of society (Gilbert and Gugler 1982).

In examining poverty as a social process, both Harvey and Friedmann extend this argument. Harvey (1992) maintains that social processes result in poverty being a condition of oppression. Citing Young's (1990) work on social injustice, he asserts that this oppression is reinforced in five ways: through exploitation, marginalization, powerlessness, cultural imperialism, and, finally, violence. Oppression produces class, gender, ethnic, racial, religious and lifestyle cleavages through the generation of social hierarchies. For Friedmann (1992), poverty could be defined as a condition of disempowerment brought about by social, political, and economic inequalities that constrain some segments of a society. This lack of power results in a lack of knowledge and skills, a lack of opportunities to access financial resources, and a lack of safe and secure life spaces. The result of both these positions is that when policies are formed and implemented, they will favor the interests of the dominant groups in a society, those with a political voice.

3.1.3 Waste Picking and Poverty

The "garbage of hope" thesis attempts to explain the persistence of poverty by examining the local social problems that help in maintaining the economic repression of a people. Those who are poor live in conditions of abject poverty because poverty is a learned behavior that is transmitted from one generation to another through values and norms. The various theoretical positions presented under the heading of "garbage of hope" take the focus away from the individual or family unit being responsible for the existence of poverty and place the focus instead on the political, economical, and social

structures of a society. Poverty is a social process that is reproduced through societal institutions.

In her study of the Kebon Kacang kampung in Jakarta (Indonesia), Jellinek (1991) found evidence to support both theses. Jellenik, along with others (Mangin (1970:xix), argue that the premises are not mutually exclusive; they, in fact, reinforce one another. From this perspective, the structuralist or "garbage of hope" thesis helps in explaining how poverty comes into being, while the "culture of poverty" or "garbage of despair" thesis provides an explanation of why people find it hard to escape the conditions of poverty.

While none of the literature on waste picking is framed explicitly in the language of the "garbage of despair" and "garbage of hope" discussions, the two schools of thought are evident. Medina (1997:256) has noted that in Mexico, for instance, a waste picker's family background may have had an influence on his or her level of education, aspirations, opportunities, and choice of occupation. Supporting the structuralist perspective, in his study of dump pickers in Gaborone (Botswane), Tevera maintains that "lack of education, capital and social connection has [sic] hindered the effects of these people to escape from poverty" (1994:31). In fact, in their examination of a waste picking community in Cebu City (the Philipines), Fernandez and de la Torre presented interpretations for both perspectives.

> At the individual, family and/or community level, poverty evolves from a number of "historical givens." These may arise from the physical, sociocultural, economic and political milieu. Individually or collectively, the "historical givens" determine the intensity and structure of poverty in a community. The availability of opportunities and resources affects the manner in which the economically deprived sector manages to survive under a state of chronic economic difficulty. Over time these coping mechanisms tend to lead the individual, family or community into a distinct way of life which, in turn, accounts for a specific

> outlook or response to exogenous socioeconomic, political and technological changes. When the changes do not bring about a major economic breakthrough, the vicious cycle of poverty starts. What one observes through time is a generational succession of the poor within the impoverished sector of the population.
>
> Intergenerational poverty, therefore, is predetermined by historically based factors and participated by poor socioeconomic and political conditions. As part of the coping mechanisms of the urban poor, scavenging is intertwined with other survival strategies...Exposure to this way of life may lead to a crystallization of a certain outlook (perception/response to change) which, in turn, brings about another set of "historical givens" (1986:141-142).

Consequently, the "garbage of despair" and "garbage of hope" premises should not be conceived of in isolation from one another. This is because, both external and internal forces are producing the conditions of poverty that the urban poor in general, and waste pickers in particular, find themselves in the midst of. Societal structures assist in the reproduction of this poverty by limiting the occupational choices open to the urban poor; these limited choices can have an influence on the occupational choices of the subsequent generation.

The inability of the urban poor to access the conventional resources of a society forces them turn to a resource that, because it is perceived of as pollution, is easily accessible. For those undertaking this activity full time, waste picking is a coping mechanism for survival. Waste pickers may find themselves caught in a cycle of poverty. Entrepreneurial activities may be ruled out because of lack of access to capital. Pickers that are trying to meet daily subsistence needs may find that investing in the future is inconceivable.

This discussion has aided in answering the question: why do people pick waste? By moving beyond the conceptualization of poverty based on economic rationales alone,

we can observe that social processes produce the societal conditions that force people to turn to garbage as a resource. It is worth reflecting on the poverty concepts since they are a heuristic way of conceptually framing policy and program responses to waste picking. In practical terms, whichever theoretical premise is perceived to be valued will have significant implications for the intervention approach favored by government agencies or by other agents of change. Different conceptualizations of the issues lead to different intervention approaches.

3.2 Continuity and Contention

The purpose of this section is to attempt to draw from the literature some common themes regarding waste pickers and waste picking. An examination of a number of case studies will reveal points of continuity and points of contention within the academic literature. Though specific issues may vary contextually, such an assessment is the first step in identifying issues that warrant intervention consideration.

3.2.1 Financial Aspects

In general, in comparison to other urban dwellers, the incomes of waste pickers are low. Often they earn nothing more than a subsistence wage. That said, there is no question that there is a wide range of income levels among waste picker populations.[14] These income levels are determined by the items collected, the hours worked per week, market demand, and the prices paid for secondary materials. Therefore, it would appear

[14] In the context of most case studies, a waste picker's income is considered "high" if he or she earns slightly more than the state determined minimum wage (Tevera 1995, Lohani 1984). In some cases, however, the income can be quite higher than the regulated minimum wage. For example, Medina (1997:300) found that full-time waste pickers in Los Dos Laredos obtain a median weekly income two times that of minimum wage workers.

that the market solely determines which materials waste pickers recover; however, as will be elaborated below, other factors also contribute to the earning potential of waste pickers.

3.2.2 Point of Access

Though income levels among waste picker populations will vary between cities, a comparison of case studies specifically focusing on street picking or dump picking reveals that the average income level of dump pickers, in general, is lower than that of street pickers. Two potential scenarios can help in explaining why dump pickers earn less.

The first employs a market approach and attributes the lower incomes earned by dump pickers to the fact that they operate in what amounts to a monopsonistic market.[15] The majority of the case studies provide only anecdotal evidence to support this claim; however, one study undertaken in Laredo (Mexico) tested this assertion. In comparing the recovery industry's dump market to the recovery industry's more competitive urban market, Medina (1997) found that the urban market, which consisted of more buyers, paid a higher price per kilogram for recovered post–consumer materials. Table 3.1 illustrates Medina's findings. From this perspective, it can be argued that the lack of a competitive market at dumpsites aids in keeping the earning levels of waste pickers low.[16]

[15] In other words, a market in which there is only on buyer.
[16] In Cali (Colombia) Birkbeck (1978) noted that buyers at the dump formed an "informal oligopoly" which aided in keeping the prices paid for recovered materials low.

Table 3.1: Comparison of Prices Paid for Recovered Post-Consumer Materials at the Nuevo Laredo Dump and in the Urban Area (Mexican Pesos)

Secondary material	Dump market	Urban market	Difference
Aluminum	2.00	2.20 – 2.50	(+) 10-25%
Copper	1.20	4.00	(+) 233%
Iron and Steel	0.10	0.14	(+) 40%

Price paid per Kilogram

Source: Medina (1997:271)

Another explanation for the low incomes of dump pickers can be attributed to their point of access to secondary materials: at the end-of-the-pipe. Using linear programming techniques, Milke and Aceves (1989) determined that in the Federal District of Mexico, dump pickers would receive higher incomes if they became street pickers and collected secondary materials at buy-back centers, rather than rummaging through mixed and contaminated wastes. This is because industries will pay a higher price for cleaner and better quality secondary materials. In other words, as post-consumer materials move through the waste stream, they lose value because they become more contaminated and damaged, and, therefore, less appealing to industries as manufacturing inputs.

A buyer may, in fact, operate a monopsonistic market at a given dump, and this may impact the earning potential of dump pickers. However, it is also fair to assert that the quality of secondary materials diminishes as they move through this urban waste stream. This too will impact the prices paid for materials harvested at the end-of-the-pipe. In either case, dump pickers, more often than not, earn less than street pickers.

3.2.3 Piece Wage

According to a number of researchers, a factor that the keeps income levels low for both street and dump pickers is that they are piece workers who receive a piece wage since the earnings of pickers are determined by the weight of materials harvested (Birkbeck 1978; Tevera 1995; Huysman 1994a). There are two general perspectives regarding piecework. The first follows a Marxist view and argues that piecework is exploitative in nature since the workers are vulnerable on account of the fact that they are operating in an a work environment that is insecure, competitive, and individualistic (Marx 1967).[17] The second perspective maintains that workers paid a piece wage are more productive than workers receiving a set wage (Fortuna and Prates 1989). Though both of these conceptualizations of piecework have strengths and weaknesses[18], they do not help in explaining the factors that constrain the piece wage of a waste picker.

Piecework, per se, does not keep pickers earnings low; instead two other factors, which are directly related, contribute to the low earnings of pickers. First, the low-income level of waste pickers is linked to the waste pickers' need to sell materials daily in order to meet subsistence needs. Briefly stated, a number or scholars have observed that when a member of a household takes up waste picking, she or he will be the primary income earner (de Kock; Tevera 1994, 1995; Huysman 1994a). As has been noted in previous sections, people undertake waste picking in an attempt to sustain life on a daily

[17] Bromely and Gerry (1979) characterize a vulnerable worker as one who is employed on a day-to-day basis, who works indirectly for a large firm as a pieceworker, or is bound to a firm through credit obligations or clientelism.

[18] In observing the impact that piecework had on capitalist societies, Leon Trotsky (1945) noted that the result of piecework is a rise in labor productivity, which produces a higher standard of living, but also increase social inequality.

basis. Since the household is surviving on a day-to-day basis, pickers must sell what they harvest daily in order to sustain the family unit.

A second reason why waste pickers' earnings are low can be attributed to the fact that waste pickers often lack storage facilities. As Birkbeck (1978) has noted, income returns increase with the amount of materials sold. Therefore, the more post-consumer materials one sells the more income one can earn. Researchers have documented that a waste picker's income rises if he or she adds value to the material through sorting and bypasses small buyers and sells to major dealers or middlemen who pay higher prices, but only purchase large quantities of materials (e.g. Huysman 1994b; van Beukering 1994). In order for a waste picker to circumvent small buyers, however, he or she must sell the material in bulk. This requires the waste picker to build up a stock, which can take anywhere between a few days to a week. And this large stock is unattainable without a safe and secure place to sort and store the harvested post-consumer materials. For example, in observing waste picker communities in Bangalore (India), Huysman (1994b) noted that the waste pickers that sold materials daily had lower returns than those who sold weekly. Huysman is not alone in this assertion: Sicular (1991) observed this same process in Bandung (Indonesia). If waste pickers stored harvested materials for several days, they could circumvent small buyers and sell to a larger dealer, who would pay a higher price. In other words, the extent to which profit is made depends on the quantity sold. Therefore, as secondary materials move through the recovery industry's hierarchy, more profits are made because of the larger quantities of materials that are being handled, along with value being added through the process of sorting and cleaning.

3.2.4 Social Relations and Production

A theme that emerges from time to time throughout the waste picking literature is that of dependency relationships between waste pickers and buyers, dealers or middlemen (Sicular 1989; DiGregorio 1994; Birkbeck 1978; Huysman 1994a; Tevera 1995). These relationships take the form of clientelism, which produces relationships based on tying or bonding. Such relationships are meant to guarantee the client the "bare necessities" in exchange for the extraction of labor and loyalty (Breman 1985; Scott 1977). In other words, they are meant to provide the client with a degree of security through the provision of loans, cash advances, and gifts, for instance.

The patron-client relationship can be defined as follows:

> an exchange relationship between roles – may be defined as a special case of dyadic (two person) ties involving a largely instrumental friendship in which an individual of higher socioeconomic status (patron) uses his [or her] own influence and resources to provide protection or benefits, or both, for a person of lower status (client) who, for his [or her] part, reciprocates by offering general support and assistance, including personal services to a patron (Scott 1977:124-125, original in italics).

Through the forming of these relationships, each person, whether a patron or a client, provides something advantageous to the other. It is in the interest of a client to affiliate with a patron because the patron has access to services that the client requires. As Berman has noted "...the poor try to increase their security within the urban system by entering into dependency relationships with social superiors" (1985:56). These relationships involve reciprocal exchange; however, in this form of social relationship reciprocity is often negative and in the patrons' favor.

Historically, these relationships were legitimized through a society's social, cultural, religious, and economic structure. Patrons were village headsmen, kin or religious figures. In describing the historical role of debt-obligations in Southeast Asian societies Reid has written:

> Society was held together by vertical bonds of obligation between men. The wealth of the rich and the power of the strong, lay in the dependent man- (or woman-) power they could gather around them. For the poor and the weak, on the other hand, security and opportunity depended upon being bonded to somebody strong enough to look after them (1983:8).

The patron-client relationship was one of socially sanctioned guarantees. The patron had a concern for his or her clients' welfare, which was manifested through reciprocal exchange. In times of crisis, patrons would assist a client, for example, by covering funeral expenses. In return, the patron would receive community prestige and a pool of labor to draw upon. In addition, the relationship provided the client with a degree of protection. In the case of agrarianism, for instance, a patron may rent fallow land to a client based on a arrangement that both the patron and the client would share the risks in agricultural production. If the harvest was bountiful, the patron would receive rent and a portion of the harvest. On the other hand, if production was minimal, remission would be granted to the client. In either case, the client would not solely undertake the burdens of risk.

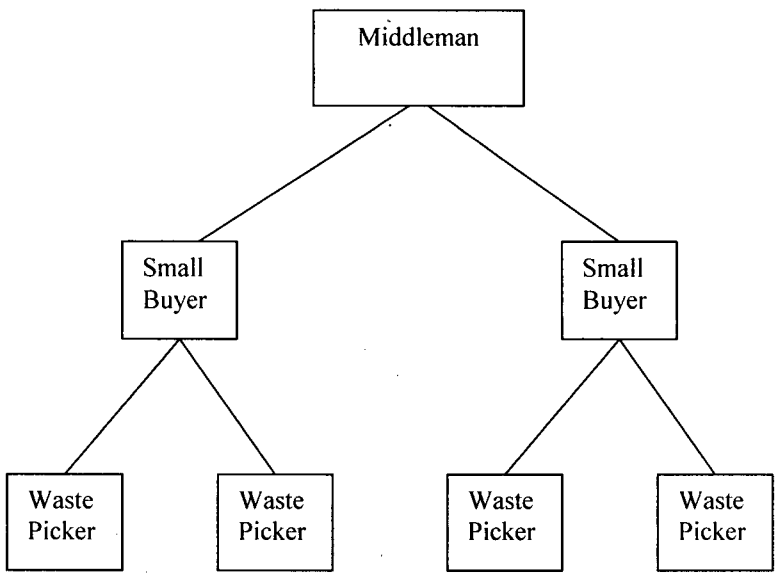
In the context of the recovery industry, buyers, dealers, or middlemen assume the role of the patron. Tying or bonding, through the provision of loans, gifts, accommodation, or credit is used to firmly establish the relationship. The result is that

waste pickers will be obliged to sell their harvested materials to the person that they are tied to. The secondary materials are often sold at below market value. [19]

Market forces, however, do not solely drive these relationships. Through the relationship, the waste picker may gain access to the means of production: garbage. In addition, the buyer or dealer will often purchase materials that have no market value, provide protection from police harassment, and assist the waste picker by providing the picker with access to social service agencies (Sicular 1990).

These vertical bonds are not only formed between waste pickers and those higher in the recovery industry but are also formed between all status rankings throughout the recovery industry (Sicular 1989, 1991). Figure 3.1 illustrates how these relationships are connected.

Figure 3.1: An Example of a Patron-Client Pyramid Within the Recovery Industry (Adapted from Scott 1977)



[19] In Mexico, India and Columbia, for instance, waste pickers may receive as little as 6 percent of the price that an industry pays for the harvested secondary materials (Medina 1998:70).

The result is the production of a patron-client pyramid. The figure above indicates that people of different status rankings are linked; for example, waste pickers may be bonded to a small buyer through the provision of accommodations and credit; several small buyers may be tied to a dealer through the provision of working capital; and a number of dealers may be tied to a middleman through the provision of credit.

In conclusion, for buyers, dealers, and middlemen, the institution of tying ensures them a steady supply of recovered post-consumer materials from those lower in the recovery industry hierarchy. The patron uses his or her social position and economic strength to increase profits. For the waste picker, dependency relationships are meant to provide him or her with a degree of safety, through the acquisition of loans and credit from buyers or dealers. In exchange, the waste picker is tied to a particular buyer or dealer, and often sells harvest materials at below market price. The positive side of such relationships is that they are meant to provide the waste picker with a degree of security in times of crisis.[20] The negative side of such relationships is that they perpetuate the conditions of poverty in which the waste picker finds him or herself. As Sicular has written, "through this relationship are guaranteed the wealth and prestige of the buyer, and also the security and poverty of the scavengers" (1990:223).

[20] The security component of dependency relationships may be lost as these relationships undergo a transformation. As Douglass (1984) observed in Thailand, patron-client relationships are becoming based on economic relations and class divisions. This has resulted in the demise of reciprocal exchange, which produces even more imbalanced relations. Douglass terms this "the worsening of (the) 'terms of trade'" (ibid.:91), which for the client results in the loss of guarantees and the protective element of the relationship. As Scott has written, "the more purely coercive the relationship is and the less traditional legitimacy it has, the more likely that affective bonds will be minimal" (1977:130). The intrusion of capital, to a degree, has restructured these social relations of production. The impact that this has on waste pickers, however, is unclear.

3.2.5 Education

As was noted above, the educational level of waste pickers is often minimal. In Bangalore (India), for example, the majority of female waste pickers are illiterate. This directly impacts earnings. Because the women lack educational skills, they are unable to determine if they are being paid a fair price for the post-consumer materials that they sell to middlemen (Huysman 1994b). In researching child waste pickers in Kurukshetra (India), Singh (1996) found that the cause of children picking was rooted in the educational and economic standard of the household. Because of the poor economic conditions of their parents, children would take up waste picking in order to augment their family's income, and therefore, not attend school. Medina (1997) found evidence of this in Laredo (Mexico). He observed that the majority of child waste pickers had not attended school. And, as was noted earlier, this contributes to the cycle of poverty.

Through the examination of survey data obtained in research undertaken in Durban (South Africa) (de Kock 1987), Gaborone (Botswana) (Tevera 1994), and Dar es Salamm (Tanzania) (Yhdego 1991) the following generalizations can be made regarding the educational backgrounds of waste pickers: the first is that a large proportion of those undertaking waste picking have not attended school; the second, is that if waste pickers have attended school, they have not obtained an education beyond the primary/elementary school level. The data from the Durban and Botswana case studies are presented in Tables 3.2 and 3.3. The data should be taken as representative rather than concrete. It is a fair assertion, however, that the educational level of waste pickers is generally low.

Table3.2: Educational Attainment of Waste Pickers in Durban, South Africa (n=96).

Educational level	Percentage
Less than std 3	37%
Std 3-5	31%
Std 6-8	31%
Matric	2%

Source: de Kock (1987:52)

Table3.3: Educational Attainment of Waste Pickers in Gaborone, Botswana (n=75).

Educational level	Percentage
None	26.7%
Std 7 or below	44.0%
Std 7	21.3%
Form 2	6.7%
'O'	1.3%

Source: Tevera (1994:26)

3.2.6 Urban Status

A persistent myth of urbanization is that the urban poor have recently migrated from rural areas. Urban natives often see these recent arrivals as being "backward" and contributing significantly to the unemployment levels of the city. Migration studies, however, have shown that there is a socially selective process in rural-urban migrant streams (LIoyd 1979; Skeldon 1990). The data suggests that those who migrate generally have resources to draw upon in the city, such as an education, an entrepreneurial spirit, or kinship ties.

Because of the social dislocation from the conventional resources of a society, it is reasonable to ask, where do waste pickers fit into this discussion on the migration process? Though the figures should be taken as representative, the data from a number of case studies (Huysman 1994b; Fernnadez and de la Torre 1986; Birkbeck 1978) suggest that there is an even split between waste pickers who are migrants and those who are non-migrants. This finding correlates with Skeldon's assertion on the relationship between migration and low-paid employment. As Skeldon has written, "while migrants do

unquestionably participate in low-paid menial jobs, and often in illegal activities, it is doubtful whether these activities are dominated by migrants. The poor and uneducated, irrespective of their migrant status, are exploited and forced into low-paid or extra-legal activities" (1990:162).

In Bandung (Indonesia), Sicular found that the distinction between migrant and non-migrant waste picker was defined by point of access to the waste stream. In this example, street scavengers are rural migrants from villages in West Java, while dump pickers are well-entrenched urban natives (Sicular 1990).

The literature also indicates that the majority of non-migrants are often first generation descendents of migrants (Huysman 1994a, 1994b; Medina 1997). In other words, they are second generation urban dwellers. An integral finding of a number of case studies regarding migrant waste pickers is that waste picking is not undertaken by recent arrivals to the city, but by entrenched urban dwellers, migrants living in the city for four or more years (de Kock 1987; Tevera 1994). For instance, in his study of dump pickers in Gaborone (Botswana), Tevera (1994) found a positive correlation between length of stay in the city and length of time as a waste picker. "Most of [the] waste pickers who had been scavenging less than one year had lived in the city for less than six years while all the waste pickers who had been scavenging for 4-9 years had lived in the city for at least 13 years" (ibid.:27). This indicates that migrants had other forms of employment before they turned to waste picking to earn a living. This corroborates Medina's (1997) observation in Mexico. He observed that the majority of rural migrants from central and northeastern Mexico possessed jobs in Los Dos Laredos' regulated labor market before turning to waste picking.

Those operating in the recovery industry may also follow a seasonal migration strategy. In Hanoi (Vietnam), for example, those undertaking waste recovery and recycling activities, such as itinerant collectors and waste pickers, follow a circular migration pattern. As DiGregorio (1997:5) has documented, during the agricultural off-season, peasants migrate to Hanoi and work in the recovery industry for on average 8.3 months of the year in order to supplement their household's income. In fact, in the Red River delta, waste recovery and recycling are a key components of the regional economy. Certain villages specialize in the recovery and processing of particular post-consumer materials.

From the literature, we can deduce that there is a range of migration patterns occurring. In general, permanent migration, *per se*, does not play a role in determining who will participate in the recovery industry. Moreover, the case studies suggest that permanent migrants perform other jobs before taking up waste picking as an occupation. Those who do undertake waste picking upon immediate arrival to the city are potentially circular migrants.

3.2.7 Women and Children

For poor women, waste picking may be an adaptive strategy. As Gilbert (1994) has noted, within low-income countries women have been forced to work more due to lesser pay and increased economic responsibility for the household. Women also have to contend with their "triple role" within the family unit. This means that along with the

increased responsibility to generate income, women are still responsible for child rearing and domestic duties.[21]

Social barriers, however, often limit women's opportunity to find employment. These barriers include, for example, lack of access to education and a lack of contacts across the urban landscape. Moreover, domestic and child rearing obligations constrain a woman's physical mobility, which can affect her income earning potential and the types of work that she can perform. In this regard, waste has become an important resource for poor women in low-income countries (Muller and Schienberg 1999, March 14), whether through income generation by means of source separation, or by means of direct participation in the recovery industry.

The benefits for women undertaking waste picking, as they are for men, include easy entry, no special skills requirement, and no operating capital; additionally, other factors relating to a woman's triple role within the family unit make waste picking a viable income earning alternative. Briefly stated, waste picking allows women with limited opportunities the ability to earn an income will simultaneously meeting household and child-rearing responsibilities (Huysman 1994a, 1994b). This is because waste picking, to a degree, is unstructured in terms of when one works.[22] This provides women

[21] In the development literature, the "triple role" of women is defined in a different manner than what is presented here. For Moser (1993), the triple role of women is approached from a community level of analysis and includes three roles: reproductive work (child rearing), income generation (market-oriented production), and community management (community organizer). The concept of the "triple role" of women, as it is presented in this study, is derived from sociology and focuses on the productive roles of women within the household. It attempts to distinguish the various forms of subsistence production that women engage in from the market-oriented production they undertake. By definition, subsistence production is non-market-oriented production that individuals and family units undertake in order to survive (Evers 1991). Two distinct examples of subsistence production are domestic duties (cooking, cleaning, and the gathering of firewood, for example) and child rearing responsibilities.

[22] Social norms, however, can influence the times when women can pick wastes. For example, Sicular (1989) observed that in Bandung (Indonesia) women could only pick during the day for fear that being out

with a degree of freedom, therefore, permitting them to divide their time between domestic duties, and child rearing, while allowing them to earn an income. The freedom over one's work schedule can be especially important for female-headed households since mothers can bring their children with them when they go out to pick.[23]

Cross-culturally, the number of women undertaking waste picking as an economic strategy varies (Baldisimo and Lohani 1988). But the literature indicates that women do play a major role in the lower circuits of the recovery industry; for example, Hanoi's recycling industry is primarily made up of women (DiGregorio 1994). In addition, Tevera (1994) found that the majority of dump pickers in Gaborone (Botswana) were women. de Kock's research in Durban (South Africa) collaborate these findings.

One point of continuity in the literature is that the income level of women waste pickers is lower than that of men (Birkbeck 1978, Huysman 1994a, 1994b, Muller and Schienberg 1999, March 14). This can be attributed to that fact that women are less mobile than men, that they work fewer hours and that they must divide their time between waste picking, child rearing, and household management. Moreover, because of their lack of mobility due to subsistence production responsibilities, women may be forced to sell to a neighborhood buyer who pays less of a piece rate than buyers outside the neighborhood. The constraints on physical mobility make dump picking an attractive alternative to street picking since mothers can work and take care of their children simultaneously. Abad (1991) asserts that dump picking is less physically exhausting, less

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at night would ruin their reputations within the community. In Bangalore (India), societal constraints also prevent women from picking waste in the evening (Huysman 1994b).

[23] For an informative autobiographical account of a single mother who was a waste picker, see de Jesus (1962). For a biographical account of "a day in the life of a woman waste picker," see Huysman (1994b:90-101).

dangerous, as well as less humiliating than street picking; however, as elaborated above, dump pickers often earn less than street pickers.

If mothers are involved in the recovery industry, in all likelihood children will be assisting in some capacity. For instance, in Bangalore (India), Huysman (1994b) observed that children help in sorting the harvested secondary materials before the materials are sold to buyers, whereas in Hanoi (Vietnam), the accompanying children of mothers who are itinerant collectors pick post-consumer materials from mixed wastes along the mother's route (DiGregorio 1994).

As previously noted, children may undertake waste picking on a full- or part-time basis in order to supplement their family's income. However, their incomes are often lower than that of adults; for example, within India's recovery industry, child labor is preferred because children can be paid a lower wage than adults and will perform any type of work (van Beukering 1994; Singh 1996). Buyers may in fact bond children to them through the offering of shelter and food in exchange for labor. The main reasons for children undertaking waste picking include poor economic conditions of the household due to conflict, death, or disease within the family unit (Singh 1996).

In general, women and children waste pickers earn less than men do. Often, waste picking is an adaptive strategy that is undertaken by these two segments of the family unit to augment the household's income; however, women or children may support an entire family through waste picking. As an occupation, waste picking is one of the few ways that women can work while meeting their household and child rearing responsibilities.

3.2.8 Health Aspects

In the waste picker literature, a point of continuity is that the majority of case studies make note of the heath risks associated with the recovery of materials from mixed wastes. Unlike their historical predecessors, contemporary waste pickers face increased occupational health risks, through the rummaging of mixed waste that is regularly contaminated. As it has for centuries, the urban waste stream in low-income countries carries contaminants such as fecal matter; however, new threats to health and habitat found in urban waste streams include hazardous chemicals and medical wastes, such as syringes, solvents, and pesticides. These by-products of production and consumption within the urban waste stream increases the public health risks for those who come into direct or indirect contact with waste.

The scholars and researchers investigating waste picking issues make note of the public health conditions of waste pickers; these findings are presented in Table 3.4.

Table3.4: Summary of Health Issues Discussed in Waste Picking Studies

Geographical focus	Health symptoms	Point of Access to the waste stream	Reference
Harare (Zimbabwe)	Respiratory diseases, diarrhea, skin diseases	dump	Tevera (1995)
Bangkok (Thailand), Jakarta (Indonesia) and Manila (the Philippines)	Eye irritation, lung disease, chronic colds, parasitism, gastroenteritis and diarrhea, skin diseases, cuts and scabies, headaches, malnutrition, anemia, urinary tract infection (females), lower back pain	dump	Baldismo and Lohani (1988)
Dar es Salaam (Tanzania)	Eye irritation, tuberculoses, diarrhea, typhoid, dysentery, coughing, malaria, cuts and scabies, headaches	dump	Yhdego (1991)
Bangkok (Thailand)	Colds, muscle and tendon disease, skin disease, hand and foot injuries, depression	not specified	Lohani (1984)
Calcutta (India)	High rate of infant mortality	dump	Furedy (1984)
Cebu City (the Philippines)	Malnutrition, scabies, skin infection, pneumonia, tuberculosis, whopping cough	street	Fernandez and de la Torre (1986)
Bangalore (India)	Tuberculosis, bronchitis, asthma, lung infections, dysentery, worm, malnutrition, skin disease, infant mortality, rabies, tetanus	street and dump	Huysman (1994a, 1994b)
Kurukshetra (India)	Tuberculosis, hook worms, gastrointestinal infections, skin infections, chemical poisoning, lead poisoning, tetanus	street	Singh (1996)

The case studies presented in Table 3.4 reinforce the point that harvesting secondary materials from mixed and contaminated wastes exposes one to certain public health risks. For example, improper clothing, such as the wearing of sandals exposes waste pickers to parasitic infection. The elevated causes of pulmonary diseases reported in Table 3.4 are most likely related to exposure to microorganisms, mold spores , and burning toxic materials.

Briefly stated, the case studies illustrate that there is a correlation between waste picking and poor public health. For instance, the average life expectancy of a waste picker in Mexico City is approximately 35 years and the infant mortality rate for waste picker families is almost 50 percent (Centro de Ecodesarrollo 1985, cited in Milke and Aceves 1989:172). In addition, a study of dump pickers in India suggested that child pickers have a 2.5 times greater risk of morbidity than children from the same area who do not pick waste (Nath, *et al.*, cited in Cointreau-Levine *et al.* 1998:625). In other words, waste pickers are at special risk of occupational injury and disease because of their direct and prolonged exposure to the urban waste stream.

3.3 Recommended Interventions

Through a review of the literature, an attempt has been made to identify major themes and issues that warrant intervention consideration. In their descriptions of the contextual events regarding waste picking, a number of scholars and researchers express the need for the development and implementation of interventions that enhance the well-being of waste pickers. This section will review the recommendations for interventions put forward by these scholars and researchers. The recommendations, though often

general, take into account economic rationales, social development objectives, national development policies, and environmental as well as occupational health concerns.

3.3.1 Economic Rationales

A number of researchers (Lohani 1984; Yhdego 1991, 1995) argue that in low-income countries, waste picking should not be prohibited or discouraged since the labor-intensive element of waste picking provides income earning opportunities for those who are underemployed. From this perspective, interventions should attempt to improve the earning potential of waste pickers. In order to raise the income earning potential of waste pickers, a number of researchers maintain that pickers should be organized into cooperatives or unions (Vogler 1981; Medina 1998; Birkbeck 1978; Yhedgo 1995), the idea being that, collectively, the waste pickers could lobby for higher wages or bypass middlemen altogether, and break the "cycle of poverty." Cooperative models run the spectrum from waste pickers collectively accumulating and selling recyclables in significant volumes, to the restructuring of the labor process by integrating waste pickers into solid waste management schemes. One such proposed cooperative model, for example, is the Garbage Industrial Estate (GIE).

According to the proponents (Sicular 1989; Poerbo 1991) of this model, GIE's should be structured as decentralized community-based waste recovery and processing depots. Each depot would be run by a waste picking cooperative and would be associated with citywide environmental and community development programs. The depots would be responsible for processing the source-separated organic and inorganic waste of a given district. In districts where waste is not collected, the depots would be responsible for collection services. The processing of inorganic materials would involve further manual

separation, cleaning, and the compacting of secondary materials. Organic materials would be composted. In terms of marketing, the premise is that waste-picking cooperatives would receive higher prices since they are producing a higher quality product. Eventually, the GIE would expand its operations by establishing pension plans, schools, clinics, and funeral funds. The employees would also be part of a profit-sharing program.

Another form of integrating waste pickers into urban solid waste management includes waste pickers becoming itinerant collectors and acquiring post-consumer materials at the source. Tevera (1994, 1995) maintains that waste pickers should be formally employed or, at the very least, that the local government should regulate the activity. Briefly stated, the objective of these intervention approaches is to make waste picking a major component of a city's overall solid waste management and regulated recycling program.

3.3.2 Occupational Health

Source-separation schemes, as noted above, are an attempt to produce higher quality recyclables; they are also, however, an attempt to improve the occupational health of waste pickers by limiting their direct contact with mixed and contaminated wastes. Therefore, Milke and Aceves (1989) maintain that source separation schemes should be implemented. This would reduce the health risks that waste pickers face.

On the other hand, recommended public health interventions designed to support those who work with mixed waste include the following: the provision of clean drinking water and washing facilities; the provision of vaccinations for hepatitis A and B, tetanus, typhoid, polio and access to medical care in general; the implementation of personal

hygiene educational programs; the provision of protective clothing such as gloves, boots, glasses, hearing protection and, in some cases, respiratory protective gear; the implementation of regulations that segregate medical and hazardous wastes at the source; the implementation of regulations that help lower air particulates at dump sites; and, finally, the provision of nutritional supplements in conjunction with nutritional health education programs (Huysman 1994a; Vogler 1981; Cointreau-Levine *et al.* 1998; Tevera 1995; Kungskulniti 1991; de Kock 1987). In addition, some researchers have argued that waste pickers should be registered since this would aid in the monitoring of vaccination schedules (Cointreau-Levine *et al.* 1998)

3.3.3 Social Development

A primary social development recommendation is the establishment of educational programs. These include literacy, vocational training, and money management schemes (Huysman 1994a; Singh 1996; Keyes 1982; Abad 1991). The objectives of these programs are either to direct people out of the waste picking business or increase their economic returns. For example, Huysman (1994a) lobbies for the establishment of literacy and marketing programs in Bangalore (India). She maintains that this would increase the earning potential of women waste pickers. For Singh (1996) and others (Keyes 1982; Vogler 1981), the establishment of vocational programs would provide waste pickers with marketable skills.

A number of researchers (Sicular 1989; Milke and Aceves 1989) maintain that waste pickers should have access to financial aid. This could include the establishment of credit unions, savings schemes, or the provision of soft loans. It is argued that these schemes would encourage waste pickers to start waste-based cottage enterprises (Haynes

and El-Hakim 1976). They would also help to break the dependency relationships that waste pickers often enter into with middlemen and moneylenders.

For both Abad (1991) and Sicular (1989), intervention strategies directed towards waste pickers should also address issues of housing and land tenure. Both researchers make this assertion based on data gathered from territorially based waste picker communities. With reference to the Smokey Mountain dumpsite in Metro Manila (Philippines), Abad maintains that the waste pickers' primary concern was tenure security. For these researchers popular settlement upgrading, where applicable, should be a central component of long-term intervention strategies.

In fact, Vogler (1981) proposes a two-stage intervention program for dump pickers that includes a number of the intervention recommendations outlined above in conjunction with a settlement-upgrading program. The first stage of Vogler's intervention model involves the provision of commercial and technical assistance. This entails the establishment of a waste picker cooperative. The objective of the cooperative is to institute an "informal factory" for the sorting and storage of harvested secondary materials. According to Vogler, this would allow the waste pickers to circumvent the exploitative middlemen. The second stage of this intervention model encompasses community development initiatives. These initiatives involve the cooperative collaborating with the government to undertake a settlement-upgrading program that includes the building of schools and clinics, the extension of basic urban services such as water, roads, electricity, and sanitation, as well as the implementation of social programs and facilities which include a school, a clinic, and a waste picker's credit union. Health

programs would also be initiated that would educate waste pickers about the use of protective clothing and vaccinations would also be instituted.

3.3.4 National Policies

In a number of case studies (Tevera 1994; Keyes 1982; de Kock 1987), Keyes and others have argued that intervention strategies cannot be divorced from national development policies. The courses of action range from formal job creation (de Kock 1987) to government policies of noninterference or tolerance. In support of the latter policy approach, Keyes has written the following: "in the face of wide-scale unemployment, the government should be ready to support and encourage people who have found even marginal gainful employment" (1982:40). This requires that when governments are designing policies they take into consideration the extensive underemployment that exists in many low-income countries. de Kock (1987) lobbies for more direct government intervention; she maintains that job creation programs should be established to assist waste pickers in finding alternative employment opportunities.

Some scholars assert that industries should restructure their business policies. There are those who propose that the industries that use secondary materials in the manufacturing process must be socially responsible. In other words, industries must realize the backward linkages that exist within the recovery industry (see Chapter 2) and accept some of the responsibility through the paying of higher prices for secondary materials (Keyes 1982). In contrast to this view, Poerbo (1991) maintains that industries that use post-consumer materials as manufacturing inputs should be given tax incentives, and that national governments should place import restrictions on raw as well as waste materials. This would help ensure stable markets for secondary materials.

In this chapter, we have examined the academic literature on waste picking. This review has identified points of continuity and points of contention within the literature. Through this discussion, issues that warrant consideration for intervention have been brought to the forefront. In addition, recommendations put forward by scholars and researchers to address these issues have been outlined. The following chapter will investigate *in situ* courses of action that have been instituted by agents of change in a number of low-income countries.

Chapter 4
Current Actions

This chapter will examine the application of interventions strategies initiated by agents of change. First, observations made by scholars and researchers regarding broad courses of action that have been attempted with communities of waste pickers will be reviewed. This will be followed by the development of an alternative framework for classifying categories of action. Finally, the chapter will conclude with an examination of the *in situ* intervention strategies employed by agents of change. Throughout this discussion, it should be understood that these contrasting intervention approaches are rooted in different conceptualizations of waste and waste pickers.

4.1 Classifying Courses of Action

This section will briefly examine, at a general level, the courses of action that have been attempted in low-income countries. From this review of the subject, the manner with which intervention approaches fit within the context of current thinking regarding waste picking will be identified.

Webster's dictionary defines intervening as coming "between in order to stop, settle or modify." In the case of urban societies, an intervention is simply an action that is targeted towards the population in general or a segment of the population and is intended to alter their existing situation. In order to initiate such an action, an agent of change must have *de jure* standing. That is, the course of action executed by an agent of change must be permitted by officialdom. Because of this, such actions are generally portrayed as being in the best interests of the society.

In reviewing both proposed and implemented solid waste recycling initiatives in low-income countries, Bartone (1986:39) noted six examples of planned interventions, or in his words "inducements" that directly impact waste picking. Among these inducements are, first, the employment of waste pickers in publicly operated materials-recovery facilities. Second, there is the authorized recognition of waste pickers as "quasi-public servants." Third, there is the establishment of "buying centers" that purchased recyclable items from waste pickers at a fixed price. Fourth, there is the organization of waste pickers into cooperatives, with the objective of increasing financial returns from the bulk selling of recyclable materials. Fifth, there is the integration of the customary waste collection system into the municipality's regulatory refuse collection system. Finally, there is the establishment of public assistance programs to improve the working and living conditions of waste pickers.

DiGregorio (1994), in his monograph on Hanoi's (Vietnam) waste recovery system, further developed Bartone's discussion as well as similar observations made by Furedy (1990) by undertaking a review of courses of action aimed at waste pickers. DiGregorio classified these courses of action according to the following four categories.

First is eradication, which involves the institution of rules or procedures intended to restrict or completely terminate waste picking activities. This intervention approach is carried out by municipal or regional authorities that potentially view waste pickers as a public nuisance and waste picking activities as a contributor to public health problems. In order to illustrate this method of intervening, DiGregorio cites the work of Keyes (1982), who documented the Metro Manila government's policy, in the 1970's, to prohibit

waste picking. The ordinance prohibiting scavenging allowed authorities to confiscate waste picking tools as well as fine and even imprison those caught violating it.

DiGregorio's second category, incorporation, acknowledges waste picking as an enduring urban reality. Incorporation can first involve the restriction of waste picking to certain sites, such as municipal dumps. To illustrate this, the author cites Gotoh (1989), who observed that in Seoul (Korea), municipal authorities provided urban services to waste pickers operating at the Nanjido landfill. This provision of urban services was done in exchange for cooperation regarding the restriction of waste picking to designated sections of the dump and to certain times of the day. A second approach is to formally recognize waste pickers as "productive citizens" who contribute to the urban economy and urban environmental management, as in the case of Jakarta (Indonesia) (Sicular 1989).

The third category, accommodation, like the second, acknowledges the persistence of waste picking. The difference is that municipal authorities make a decision not to intervene or officially recognize waste picking activities. Waste pickers are simply left to go about their daily business unharassed by authorities. As was noted by DiGregorio , in the early 1990s this was the situation in Hanoi, at least at the bureaucratic level.

Collaboration is DiGregorio's final category; in this category, authorities recognize private waste recovery systems as complementing the official refuse collection system. In providing an example of this intervention approach, DiGregorio cites Sicular's (1989) work on the establishment of Garbage Industrial Estates (GIE) in Bandung (Indonesia). In the GIE model, waste pickers and buyers form a waste-recovery

cooperative which collects and processes recoverable materials from a neighborhood's solid waste stream, leaving the refuse for municipal workers (see Chapter 3).

In a similar venture, Medina (1997) has also classified public policies toward waste pickers according to four categories. Medina refers to his first category of public action towards waste pickers as repression. This category is similar to DiGregorio's category of eradication, in that waste pickers are often viewed as a symbol of embarrassment for city officials. The end result is that repressive policies are enacted against waste pickers. This point is illustrated by Medina through the retelling of the accounts of a campaign of "social cleansing" in Colombian cities in which, in 1992, forty waste pickers were killed and their organs harvested and sold for transplant. The corpses were sold to a university to be used as cadavers by medical students. Astonishingly, it is estimated that by the end of 1994, 2,000 waste pickers, beggars and prostitutes were killed in these types of "social cleansing" campaigns in Colombia (Anon 1994, cited in Medina 1997).

Medina's second category, neglect, is characterized by a policy of indifference or tolerance by city officials. Medina (1997:203) observed, while conducting his field research on waste pickers in Laredo (Texas) that the city's ordinances prohibited sorting through refuse in public spaces; however, he noted that the police had not cited anyone for breaking the ordinance for almost a decade.

The third category, collusion, is defined as being based on a relationship of political clientelism, in that city officials develop relationships with waste pickers that are either exploitive or based on some form of reciprocity. In Nuevo Laredo (Mexico), for example, waste pickers bribe the police in order not to be harassed (Medina 1997).

The final category, stimulation, is characterized by the application of policies that take into account the social, environmental, and economic benefits of recycling. To illustrate this point, Medina offers Porto Alegre's (Brazil) recycling program as an example. The program integrated waste pickers into the city's curbside recycling program in order to reduce the recycling program's operational costs (Wells 1995).

4.2 An Alternative Classification Framework

This section will develop a comprehensive typology for classifying intervention strategies. Below are seven categories of intervention approaches aimed at waste pickers and waste picking issues. The revised categories are as follows: elimination, inattention, consolidation, , redirection, provision, cooperation, and recognition. The seven categories are useful for thinking about ways of intervening and to acquire an understanding of how agents of change are approaching the issues on the ground. The categories were developed through an inductive inference and are based on the descriptive categories outlined in previous sections. These descriptive categories assist in conceptualizing broad categories of intervention approaches as they apply to waste pickers and waste picking. Furthermore, a review of the academic literature on waste pickers (Chapter 3) aids in the formulation of these categories. As elaborated in the previous chapter, the academic research on waste picking often employs qualitative research methods and has tended to focus on the demographic characteristics, living conditions, earnings, societal and self perceptions, working conditions, and educational attainment of geographically-specific groups of waste pickers. The categories are primarily informed by an examination of actions, or development interventions, initiated

by both public and private organizations aimed at waste pickers, which are discussed in subsequent sections. The seven categories attempt to address the specific attributes of a given course of action. The following discussion will elaborate on the seven categories for classifying intervention approaches aimed at waste pickers, and is intended to aid in the development of an understanding of the current thinking regarding waste picking intervention strategies.

4.2.1 Elimination

Elimination usually occurs through the application of regulations and procedures designed to abolish waste picking and collecting activities. The ability to initiate this action is vested within the state's regulatory system; however, so-called vigilante groups or street gangs may use *de facto* means to, for instance, coerce pickers and collectors out of a given district. This intervention approach is often implemented when a city is attempting to acquire an image as a modern metropolis. The image of modernity is a powerful justification for the elimination of a socially stigmatized occupation like waste picking. Explanations put forward for elimination may include the following: pickers and collectors hinder the orderly collecting, storing, transporting and processing of solid wastes; pickers and collectors are an embarrassment to city officials; the activities of pickers and collectors hinder the flow of traffic through out the city; picking itself raises public health concerns for the pickers as well as for the urban populace (Haynes and El-Hakim 1979; Keyes 1982; DiGregorio 1994)..

Intervention may be achieved through the introduction and implementation of laws criminalizing waste picking activities. Keyes' (1982) assessment of waste picking in

Metro Manila during the 1970's, noted earlier, is a prime example of an elimination intervention approach.

4.2.2 Inattention

Only municipal governments take this approach. The authorities acknowledge the existence of pickers and collectors and are aware of their needs, but the authorities do not use their institutional ability to intervene. Complex political, economic, and social forces shape this decision. The government's position is that these activities are a consequence of high urban unemployment combined with a market for post-consumer materials. The problem is that government agencies may be unable to institutionally address the economic and employment needs of the populace. That is, a government may lack the resources to improve the livelihood and living conditions of its citizenship. This was the position taken by municipal authorities in Gabrone (Botswana) in the early 1990's: authorities tolerated waste picking because the municipal government was not in a position to provide "legitimate" employment opportunities (Tevera 1994).

Inattention is a result of complex interactions between dominant and subordinate segments of a society. From this intervention perspective, it could, then, be argued that disregarding or neglecting waste picking issues is itself a response based on government policy.

4.2.3 Consolidation

This intervention approach is usually presented as a pragmatic response to the provision of urban services by municipal governments with limited financial resources. It involves the assimilation of unregulated picking and collecting activities into the regulatory solid waste management framework. This is done through the restructuring of

the labor process, which results in the creation of "legitimate" employment opportunities that are waste-based. The assumption is that employees will be drawn from those currently working in the non-regulated resource recovery industry.

The consolidation procedure may be implemented through two paths: waste pickers and waste collectors are registered as quasi-public servants in community-based solid waste management or urban environmental schemes from which they draw a salary; or, alternately, refuse collection responsibilities are contracted out to private companies, associations, or cooperatives.

In either case, the quasi-public servants or the contractors are responsible for the collection of refuse, although they may simultaneously supplement their income by harvesting post-consumer materials that have market value from the city's waste stream. A second intervention strategy that can have an impact on the labor process occurs when municipalities establish publicly run waste recovery facilities or micro-enterprises, such as composting plants, that employ former pickers and collectors (Vogler 1981;Furedy 1990). The objective of all these consolidating approaches is to improve urban environmental management while still diverting secondary materials from the waste stream.

4.2.4 Redirection

This intervention strategy typically uses "top-down" approaches in which persons with specialized training provide "expert" help to those less fortunate. It involves access services and programs that are designed to divert people out of the waste picking occupation and into more "legitimate" forms of employment. This objective is realized through such interventions as vocational training programs, small business loans,

education programs, grants, scholarships, and the establishment of alternative forms of employment.

Redirection interventions often focus on children. Programs may be designed in such a manner as to educate child waste pickers, so that they can find alternative employment. Alternately, intervention approaches may be preventative in nature, and include establishing of schools for the children of waste pickers. The aim is to provide these children with vocational and "life" skills in an attempt to end the cycle of poverty.

4.2.5 Provision

Similar to the redirection intervention strategy discussed above, the provision action approach follows a "top-down" formula through which persons with specialized training provide "expert" help to those in need. It involves the provision of social welfare services that are designed to assist waste pickers and their families. The provision of support services can take many forms, but involves a humanitarian orientation to development. For instance, support services may include health education programs, insurance, literacy classes, the establishment of savings schemes, medical services, capital donations, small business loans, family planing programs, micro-enterprise education programs, social security, and housing/land tenure schemes. This intervention strategy is simply attempting to support those undertaking waste picking. Those in the role of supporter will often concurrently take on an advocacy role that may involve lobbying for the legal recognition and protection of waste pickers. The objective is to improve the working conditions of waste pickers.

4.2.6 Cooperation

Whereas most provision interventions are instituted and run primarily by professionals, the majority of cooperation interventions are autonomous or represent some collaboration between professionals and target populations. The objective is to employ strategies that enhance people's control over their own destiny. The intervention procedures are designed to engender self-help: interventions consist of strategies to help people help themselves.

Cooperation interventions involve some means of improving working conditions, for instance, improving the waste pickers' and collectors' access to the means of production. This can occur by simply accommodating waste pickers at transfer stations, or by establishing waste picker cooperatives, unions and associations that may lobby for higher earnings and government recognition of pickers and collectors. In addition, these associations and cooperatives may initiate provision programs such as small-enterprise management training, legal assistance, and the extension of loans. An objective is to increase the earning and lobbying power of those at the lowest strata of the resource recovery industry. Secondary materials, however, will initially be continued to be recovered from mixed wastes. These schemes may receive outside support, but the position is often taken by the agent of change that the schemes will become independent and self-reliant.

4.2.7 Recognition

The proponents of this intervention approach are of the opinion that picking and collecting activities complement the existing solid waste management system, and are vital components of the urban economy. With this recognition comes the waste pickers'

and collectors' right of access to secondary materials. In other words, cooperatives or associations made up of pickers or collectors are officially recognized as having a right to harvest and/or process source-separated post-consumer materials. Schemes, for example, that can be classified under this category include private companies, associations, or cooperatives that are contracted or given access permission by municipalities, for the purpose of collecting and/or processing source-separated recyclables. The organizations are recognized by government authorities, but are structurally distinct from the publicly operated solid waste management system, and are not involved in refuse collection. The organizations may be responsible for the collecting, transporting and/or processing of post-consumer materials. These intervention schemes often develop out of the cooperation intervention strategies discussed above; however, unlike the coop approach, post-consumer materials are no longer picked from mixed waste, but rather, separated at the source.

Table 4.1: Summary of Intervention Approaches

Nature of Intervention	Aspects of Intervention
Elimination	The implementation of regulations to abolish wastes picking and waste collecting. No support services offered in place of elimination.
Inattention	Municipal authorities acknowledge the existence of waste pickers and waste collectors, but will not institutionally intervene.
Redirection	Programs and polices are designed to divert people out of waste picking. They include vocational training, small business loans, educational classes, "life" skills programs, and the creation of alternative employment
Consolidation	Assimilate waste pickers and waste collectors into the regulated solid waste management system through registration, the payment of a salary, or the provision of private contracts. Duties include the simultaneous collection of refuse and post-consumer materials.
Provision	Provision of support services such as the following: the extension of loans, legal aid, education programs, medical assistance, health education, savings schemes, housing/land tenure schemes, donations, insurance, grants and scholarships.
Cooperation	Programs to improve access to the means of production, such as the establishment of waste picker cooperatives and associations.
Recognition	Waste pickers and collectors are legally recognized but structurally separate from the solid waste management system. Collect and/or process source-separated post-consumer materials.

4.2.8 Section Summary

A summary of the intervention approaches discussed above is presented in Table 4.1. The categories are simply an aid for interpreting the policies, programs and projects that have been initiated to "deal" with waste pickers. Bartone (1986), DiGregorio (1994) and Medina (1997) developed their categories by observing how governments primarily respond. Governments, through their regulatory power, may be the principal agents of societal intervention; they are, however, not the sole agents of social change. The categories of intervention schemes developed above attempt to rectify this oversight by taking into account the fact that actions towards waste pickers are often collaborative ventures between governments, non-governmental organizations, community-based organizations, international donor agencies, and religious institutions, to name but a few.

Moreover, economic constraints, limited resources, and administrative weaknesses have all contributed to the "rolling back of the state." This has resulted in a shift from direct government involvement to more indirect approaches through which the state permits civic institutions to play a more substantive role.

What follows is an examination of how these attempts to induce change are operationalized. This discussion will focus its attention primarily on collaborations between governmental agencies and non-governmental organizations (NGOs).[24] Therefore, the categories of elimination and inattention will not be elaborated upon since these responses often take the form of unofficial government policy. Moreover, the humanistic foundation on which NGOs are built is based on assistance and not repression.[25] The partnerships discussed below attempt to assist waste pickers based on how the problem is defined. Research has shown (van de Klundert and Lardinois 1995; Medina 1998) that government support is needed for an intervention strategy to be implemented and sustained.

Through this discussion, we will see how the interventions implemented by the agents of change fit within the perceptions of waste and waste pickers. In other words, the intervention approach that is favored is determined by the answer given to the

[24] Much energy has gone into the debate of defining non-governmental organizations (NGOs). It is well beyond the scope of this study to enter into such a debate. Therefore, rather than review the vast literature on the subject and the ensuing debate over the definition of the term this study will simply concur with Smillie's basic framework for defining what constitutes an NGO. For Smillie (1995:35-36), an organization can be classified as an NGO if it meets the following criteria: *formal*, the organization must have an institutional element, such as a regularized cooperate structure; *private*, the organization may receive government support, but it is institutionally separate from government; *non-profit distributing*, the organization may have a financial surplus, but this surplus is not redirected to owners or stockholders; *self-governing*, the organization is in a position to manage its activities; and finally, *voluntary*, there is some degree of voluntary participation within the organization's structure, even though there will inevitably be paid or professional staff. Employing this broad framework, in the context of this study, the term NGO refers to such diverse organizations as labor organizations, environmental groups, religious institutions, universities, and humanitarian-oriented organizations.

question: what is the problem that requires intervention? With this framework for analysis, we will turn our attention to discussing the specific actions directed at waste pickers on a case-by-case basis.

4.3 Specific Courses of Action

At present, there are a number of intervention schemes that are either directly or indirectly attempting to induce change within the metropolis. These schemes involve waste pickers and waste picking in some manner. This section aims at summarizing 19 of these schemes through the identification of the specific interventions implemented by the agents of change.

4.3.1 **Agent of change:** Superintendency of Public Cleansing (SLU)
Geographical location: Belo Horizonte City, Brazil
Nature of Intervention: Cooperation, Recognition

Narrative:

In Belo Horizonte City (Brazil), the Superintendency of Public Cleansing (SLU) works in collaboration with the Street Scavengers' Association (ASMARE) for the improvement of urban services. In order to reduce the amount of post-consumer materials in the city's solid waste stream, the SLU established a waste reduction scheme that incorporates waste pickers. The scheme is centered on source-separation and public education programs. In fact, a new city department called the Assessoria of Mobilizacao Social (AMS) was created to educate the public about the importance of separating wastes at the source. The waste picking cooperative ASMARE is responsible for

[25] For a comprehensive discussion of the humanitarian and philosophical values that NGOs draw on see

collecting the source separated materials from offices, commercial establishments and from recycling containers that are placed throughout the city. SLU provides the waste pickers with operational support, with their objective being to improve the earnings, working conditions, and social status of the waste pickers while simultaneously improving urban environmental management.

ASMARE provides the waste pickers with a warehouse for the purpose of sorting secondary materials, along with trucks to collect the secondary materials. In addition, the waste pickers must attend an educational program that is designed to teach them human relations skills. Waste pickers who join the cooperative become associates and are paid according to the current market value of recovered materials, and are given monthly and yearly incentives. According to the association, the number of associates increased from 31 in 1993, to 210 in 1998 (ASMARE 1998). ASMARE also promotes public awareness campaigns that are intended to improve the image of waste pickers, and to show the environmental importance of waste picking.

ASMARE sees the social problems that the waste pickers bring to the work environment as impediments. The association also maintains that it lacks the organizational structure to cope with the large-scale sorting and storage of the recovered post-consumer materials.

Collaborating Organizations: Street Scavengers' Association (ASMARE) Pastroal de Rua (Catholic Church), Municipal Secretariat of Social Development, State Technolgical Research Foundation (Belo Horizonte City), Santa Casa de Misericordia (public hospital, Belo Horizonte City)
References: SLU (1999, March 2); ASMARE (1998)

Smillie (1995:22-31).

4.3.2 Agent of Change: EXNORA (Excellent Novel and Radical)
Geographical Location: Chennai, India
Nature of Intervention: Consolidation

Narrative:

In Chennai (India), the NGO EXNORA introduced a community-based solid waste management scheme that incorporates waste pickers. The former waste pickers are known as "Street Beautifiers" and are responsible for the collection of mixed wastes from households. They collect the mixed wastes in the morning and then sweep the streets. Individual households pay for the service based on an "ability to pay" formula. Community-based committees known as Civic EXNORA's are responsible for collecting the money for the waste collection service and for paying the Street Beautifiers a monthly salary. The Street Beautifier augments his or her income through the harvesting of post-consumer materials from the collected mixed wastes. They are also responsible for taking the organic materials to vermi-composting facilities. In the city of Chennai, EXNORA estimates that it has created 1500 jobs (EXNORA 1999, March 2:3).

Reference: EXNORA (1999, March 2)

4.3.3 Agent of Change: CEE South
Geographical Location: Bangalore, India
Nature of Intervention: Redirection, Consolidation

Narrative:

The NGO CEE South initiated a program that was intended to educate the public about the importance of waste reduction through recycling while simultaneously educating the public about the valuable role that waste pickers play in urban environmental management. CEE South in collaboration with the Bangalore City Corporation (BCC), has established community-based, solid waste management schemes

throughout the city. CEE first implements source-separation programs in neighborhoods. Waste pickers are then employed as "waste retrievers" and are responsible for collecting all source-separated wastes, both organic and inorganic, from households, offices, and commercial establishments. In return for the service, the households contribute financially to a citizen's committee that pays the salaries of the waste retrievers.

CEE is responsible for training the former waste pickers in safe methods of collecting wastes as well as in methods of composting. The waste retrievers are provided with uniforms and identity cards. In addition, the waste retrievers have access to literacy and vocational programs that are intended to provide them with alternative employment skills.

CEE maintains that the project has helped to reduce some of the social stigma attached to waste work. In addition, the neighborhoods in which the community-based solid waste management schemes have been operating are much cleaner now than they were in the past. The compost produced has also contributed to improved park conditions. Moreover, because of the access to humus, there has been an increase in urban agriculture in the neighborhoods in which the schemes have been operating. However, the main setback in the establishment of further community-based, solid waste management programs is public apathy.

Collaborating Organizations: Norwegian Agency for Development Co-operation (NORAD), Bangalore City Corporation (BCC)
References: CEE South (1999, March 2)

4.3.4 Agent of Change: *Cooperativa Recuperar*
Geographical Location: Medellin, Colombia
Nature of Intervention: Provision, Cooperation, Consolidation

Narrative:

Cooperativa Recuperar is a waste picking cooperative that was established in 1983 and currently has over 1,000 members (Medina 1998:71). Members of the cooperative have access to loans, academic scholarships, and accident insurance. The cooperative operates a secondary materials recovery facility, and contracts out its services for both the collection of mixed wastes and source separated secondary materials. For instance, the cooperative has a private contract with the township of Guarne (Colombia) to collect the town's mixed wastes. In addition, the cooperative hires out temporary workers to both public and private organizations and provides gardening and cleaning services to bus terminals, conventions, private companies, and fairs.

Reference: Medina (1998)

4.3.5 Agent of Change: CEMPRE
Geographical Location: São Paulo, Brazil
Nature of Intervention: Provision

Narrative:

CEMPRE, otherwise known as the Brazilian Recycling Commitment, is a Brazilian non-profit association. The association was founded in 1992 by a number of industries that use secondary materials in the manufacturing stages of production. Initially, CEMPRE's mandate was to document the various municipal recycling programs that were occurring in Brazil. This endeavor resulted in the production of a databank called "EcoData" which provides decision-makers and the general public with information regarding recycling and solid waste management. The association also

operates a scrap-metal hotline, which is intended to answer questions about recycling. In addition, the association publishes a bi-monthly newsletter that discusses solid waste management issues and topics.

CEMPRE, in collaboration with a Catholic foundation known as the Fraternal Assistance Organization, has developed a recycling cooperative educational kit. Due to a limited number of staff, however, CEMPRE does not provide direct assistance in the establishment of waste picking cooperatives. The educational kit is a "do-it-yourself" program that explains how to establish a waste pickers' cooperative. CEMPRE administers the educational kit to non-governmental organizations and religious institutions that are working with waste pickers or with the homeless. The kit is also supplied to urban cleaning departments that seek to incorporate waste pickers into their solid waste management schemes.

The kit gives advice on the occupational health hazards of picking materials from mixed waste, along with work safety and hygiene tips. The kit includes a number of flip charts, book-style leaflets, a videotape, and degree certificates that are given to the waste pickers at the end of the course. Through the establishment of the cooperative, the kit is addresses several problems. The first problem that is addressed is the issue of unemployment. Second, CEMPRE maintains that recycling programs run by waste picker cooperatives are more cost-effective than those run by municipal governments. Third, the association believes that the establishment of cooperatives will improve the incomes of the waste pickers by reducing the exploitation of waste pickers by middlemen. Fourth, through the establishment of a cooperative, waste pickers take the first step at reintegrating themselves into society. Fifth, the kit is intended to improve the

perception of waste pickers by focusing on the environmental benefits of waste picking. Finally, cooperatives provide dump pickers with alternative employment opportunities.

Collaborating Organizations: Coca-Cola, Mercedes-Benz, Nestle, Pepsi-Cola, Procter and Gamble, Brahma (beverages sector), Enterpa (waste management), Lever Bros, Suzano (paper), Tetra Pak (packaging), Vega Sopave (waste management)
Reference: CEMPRE (1996)

4.3.6 Agent of Change: *Sociedad de Seleccionadores de Materiales* (SOCOSEMA)
Geographical Location: Juarex, Mexico
Nature of Intervention: Provision, Cooperation

Narrative:

SOCOSEMA is a cooperative that operates along the United States-Mexican border near El Paso, Texas. The cooperative was founded in 1975 and is financially supported by local businesses. The local government provides the cooperative with a right of access concession to the local dumpsite. In addition, local industry donates post-production materials to the cooperative. The cooperative has diversified its activities and currently provides cleaning services to local businesses. SOCOSEMA sponsors educational programs and training courses, and provides medical assistance and legal protection to its members.

Collaborating Organizations: local businesses
Reference: Medina (1998)

4.3.7 Agent of Change: *Saleng* fund project
Geographical Location: Bangkok, Thailand
Nature of Intervention: Provision

Narrative:

In Bangkok, Thailand a welfare assistance fund known as the *Saleng* fund project has been established by Dr. Jirapol Sinthunawa to provide assistance to the city's waste pickers. The fund was established to acknowledge the valuable community service that

the waste pickers perform, through the diversion of secondary materials from the city's waste stream. The fund is intended to provide waste pickers with medical assistance and to train them on how to identify and address occupational health issues. In addition, waste pickers can access the fund to buy new equipment, such as tricycles. The project aims to help increase the earning power of waste pickers. The project's founder believes that as the waste picker's income level rises, he or she will be able to purchase source separated materials from households, offices and factories, further increasing his or her income. The project is funded through private donations.

Reference: Sukrung (1998)

4.3.8 Agent of Change: *Fundación* Social
Geographical Location: Colombia
Nature of Intervention: Cooperation, Provision, Consolidation, Recognition, Redirection

Narrative:

Fundación Social is an NGO that operates on a national scale. The organization's main objective is to improve the "quality of life" of waste picker families through organizational processes (Querubín 1996). There are five components to this approach. The first component is education, which is intended to help *Fundación* Social understand the contextual issues in which the waste pickers operate. The second component is the establishment of associations and cooperatives. This occurs at the local, regional, and national levels. Individuals at the local level form cooperatives. At the regional level, cooperatives operating in one or more cities form regional associations. At the national level, these regional associations form the National Recyclers' Association (N.R.A.), which lobbies for the rights of waste pickers. The third component is the financing of

capital donations and loans. The capital donations are non-refundable and are intended to help cooperatives with the financing of local projects. *Fundación* Social also provides loans to fund the establishment of urban recycling and sanitation projects. The fourth component of the organization's approach is providing advice. In other words, the organization provides local cooperatives with technical, managerial, and legal assistance when a new recycling or sanitation project is being designed and implemented. Finally, *Fundación* Social is involved in the research and development of recycling technologies and organizational structures as these initiatives apply to urban wastes.

At the local level, waste pickers are first organized into local cooperatives; it is estimated that 125,000 people form these cooperatives (Querubín 1996:3). *Fundación* Social then helps pickers build storage facilities, and improve working conditions by bettering transportation and quality control. The program has also established a social security system as well as a health care and pension fund. "Scavengers' Houses" are also established and serve as schools for the children of waste pickers as well as vocational training facilities for women. To date, *Fundación* Social has helped to build forty warehouses that process recovered materials, and has assisted in the development of value-added projects, such as the production of plastic hoses and the raising of worms. In addition, local N.R.A. branches are attempting to move into the area of urban service delivery, by having municipalities' contract out public sanitation services to its branches.

Collaborating Organizations: governments
Reference: Querubín (1996); *Fundación* Social (1999, March 2)

4.3.9 Agent of Change: Urban Cleaning Municipal Company (EMLURB)
Geographical location: Recife, Brazil
Nature of Intervention: Cooperation, Provision, Redirection, Recognition

Narrative:

In an effort to address environmental degradation and urban unemployment, the Municipality of Recife instituted the "Selective Solid Waste Collection and Recycling Project." The project is supported by the Municipal Council and local community-based organizations, which are responsible for educating the public on the benefits of separating waste materials at the source. EMLURB places containers for the segregated collection of recyclables in affluent neighborhoods throughout the city. EMLURB also works with community-based organizations to establish collection cooperatives in low-income neighborhoods.

The program integrates both street and dump pickers into its operations. This is achieved by having EMLURB, in collaboration with community-based organizations organize both groups of pickers into cooperatives. The cooperatives fund themselves by selling the harvested post-consumer materials directly to manufacturing industries. Street pickers are given carts and identification plates, and are responsible for the collection of source-separated secondary materials that are donated by households. Each cooperative generates approximately eight jobs (EMLURB 1999:3). Street pickers have access to literacy programs, health programs, and micro-enterprise programs. Along with the establishment of the cooperatives, these programs are intended to improve the legal status and economic returns of the waste pickers by circumventing the middlemen.

The project involving dump pickers is intended to improve working conditions through health education. In order to improve dumpsite safety, dump pickers sort items

at designated sites. Through this program, dump pickers are given social, legal, and health support. In addition, children who work as dump pickers are directed out of the occupation by being given work in communal vegetable gardens, in exchange for food. Educational programs have also been established to provide dump pickers with literacy skills and vocational training. In order to direct people away from work at the dump altogether, the project gives pickers the opportunity to join a street picker cooperative, and therefore become involved in collecting source-separated secondary materials.

Collaborating Organizations: Municipality of Jaboatao dos Guararapes; The Glass Industry Company, and Josue de Castro Centre for Studies and Research
Reference: EMLURB (1999, March 13)

4.3.10 Agent of Change: Vincentian Missionaries Social Development Foundation, Inc. (VMSDFI)
Geographical Location: Quezon City, Philippines
Nature of Intervention: Provision, Cooperation, Recoginition

Narrative:

In 1991, the church-based organization known as the Vincentian Missionaries Social Development Foundation, Inc. (VMSDFI) initiated a community development project at the Payatas dumpsite in Quezon City that was meant to build on the community's already existing *de facto* structures. The project is an environmental development program which integrates housing, health, social, and economic initiatives. These goals are achieved through service delivery, advocacy lobbying, and micro-lending schemes.

With the help of VMSDFI, the waste pickers formed their own people's organization called the Payatas Scavengers' Association under the Payatas Scavengers' Development Programme. The association lobbies for policy changes by focusing on the

legal status of the waste pickers. It is also involved in improving the public image of waste pickers and their working conditions, along with increasing the bargaining power of the waste pickers, and their participation in local decision making.

VMSDFI has also established the "Micro-Enterprise Financing Promotion Programme" (MISEREOR) to promote women's involvement in micro-enterprises. The program provides financing for micro-enterprises, along with the provision of welfare loans for health, housing, education, and emergency needs. It is based on a model of "savings before credit." Access to the loans is meant to break the cycle of dependency that many waste picking families have developed with moneylenders and middlemen. In addition, the organization, in collaboration with other organizations, provides training and business management workshops.

In correspondence with the waste picking associations, VMSDFI implemented waste recovery and processing projects, such as a waste recovery centre and the handmade paper-recycling project. In partnership with the waste picking community at the Payatas dumpsite, the organization has undertaken a water-drilling project which not only provides the community with clean water for domestic uses but it also provides micro-enterprises with water to use in the product-enhancing stages of production.

In accordance with VMSDFI, the Payatas Scavengers Association has begun the "Scavengers' Cooperative Housing Project," which is a land acquisition and housing program. This involves the association negotiating with landowners for land purchases as well as collaborations with government housing agencies. Although it is in its initial stages of development, the plan is to design a community space that takes into account the specific needs of waste pickers and community-based, recycling enterprises.

Collaborating Organizations: Philippine Partnership of Support Services Organizations (PHILSSA); Green Forum Philippines; United Nations Volunteers-South East Asia Regional Programme (UNV-SRP); WASTCON; International Labour Office (ILO), the Philippine Enterprise Development Foundation.
Reference: Vincentian Missionaries (1998)

4.3.11 Agent of Change: *Jeevodaya*
Geographical Location: Bangalore, India
Nature of Intervention: Provision

Narrative:

Jeevodaya is a church-based, non-profit organization that works with street and orphaned children in Bangalore (India). The organization's mandate is the "empowerment of the rural and urban poor." In order to achieve this mandate, the organization establishes health clinics and camps for street and waste picking children. *Jeevodaya* also offers educational sponsorship to waste picking children. In accordance with these other initiatives, the organization runs public awareness campaigns that raise awareness about alcoholism, violence, poverty, and unemployment.

Reference: *Jeevodaya* (1999, May 30)

4.3.12 Agent of Change: Ahmedabad Municipal Corporation (AMC)
Geographical Location: Ahmedabad, India
Nature of Intervention: Consolidation

Narrative:

In Ahmedabad (India), the local authority has established partnerships with a number of private and non-governmental organizations. These partnerships are formed in order to improve both the urban environment and urban service delivery. One such project employees 2000 paper-picker women. The project is the called the "Clean Ahmedabad Campaign" and has been executed in collaboration with the Saundarya

Paperpickers' Cooperative. The project involves the environmental regeneration of 70 neighborhoods throughout the city. The women are employed to clean up the urban environment as well as to deliver solid waste collection services to both residential and commercial areas.

Collaborating Organizations: Saudarya paper pickers' Cooperative, Prathana, Construction Builders, Excel Industries
Reference: AMC (1999, March 2)

4.3.13 Agent of Change: All India Institute of Local Self Government (AIILSG)
Geographical Location: Bombay, India
Nature of Intervention: Provision

Narrative:

In The All India Institute of Local Self Governemnt (AIILSG) is working with local authorities to provide the waste pickers at the Deonar dumpsite in Bombay with a drop-in centre. The centre will house a health facility that will provide medical care, vaccinations, hygiene education, and family counseling to the waste pickers of Deonar. In addition, the drop-in centre will provide day-care services along with literacy classes. AIILSG's long-term objectives are to improve the status of waste pickers and to establish waste picker savings schemes.

Collaborating Organizations: War on Want
Reference: War on Want (1999, May 30)

4.3.14 Agent of Change: *Undugu* Society
Geographical Location: Kenya
Nature of Intervention: Recognition

Narrative:

The *Undugu* Society is a non-governmental organization that works in the areas of urban development and child welfare. Since 1981, the organization has been involved

in the recovery of waste through recycling projects. These projects are designed to pay for the education of underprivileged boys. In 1992, the *Undugu* Society collaborated with Coca Cola in the creation of a job and income generation program for waste pickers and street children that was also intended to improve the urban environment. Through this project, waste pickers are involved in the collection and processing of plastic materials that have found their way into drainage system. The collected plastics are recycled and turned into plastic trimmings for Coca-Cola coolers. This has created jobs for waste pickers and street children, and has lead to the establishment of manufacturing industries that use secondary plastics in the production of building blocks, furniture, tiles, and candles, for example.

Collaborating Organizations: Private businesses (e.g. Coca Cola)
Reference: Davies-Cole (1996)

4.3.15 Agent of Change: Garbage Recycling and Segregation Programme (GRASP)
Geographical Location: Pune, India
Nature of Intervention: Cooperation, Provision, Recognition

Narrative:

The mandate of the Garbage Recycling and Segregation Programme (GRASP), a non-governmental organization, is the uplifting of female waste pickers. For GRASP, this is achieved through improving incomes, and the overall improvement of working conditions. In Pune, the organization has worked with female waste pickers and waste buyers to form a union named the "Waste Paper People's *Panchayat*." The union meets every two weeks to discuss prices for segregated wastes, identity cards, domestic violence, and protection from police harassment. GRASP has begun to develop and implement non-formal education classes for the children of waste pickers as well as

short-term credit schemes. Currently, a mobile van provides health services to the women and their children. In addition, in accordance with the women's waste picker union, GRASP has developed home-based businesses for female waste pickers whose mobility is affected by illness. With the help of the Municipal Corporation, the plans include the development of vermi-composting facilities along with other waste-based businesses, such as paper bag production.

Collaborating Organizations: Centre for Adult Education and Extension Programmes of SNDT Women's University in Pune
Reference: Huysman (1994a)

4.3.16 Agent of Change: Ragpickers' Education and Development Scheme (REDS)
Geographical Location: Bangalore, India
Nautre of Intervention: Redirection, Provision

Narrative:

The Ragpickers' Education and Development Scheme is an undertaking of the Marianist Trust. The Marianists are a community of brothers and priests in Bangalore, India. The scheme concentrates its efforts on street children aged six to eighteen who engage in waste picking as a survival strategy. Over several decades, REDS has undergone a number of transformations, in terms of the organization's intervention strategies. For instance, in the late 1970s, the organization's approach to helping street children was the establishment of a cooperative and waste-purchasing shop; however, both ventures failed.

Currently, REDS runs a twenty four-hour shelter for street children along with a vocational training program. The training program teaches trades such as electronics, electrical work, tailoring, crafts, painting, and screen-printing. REDS also provides a courier service and an office attendant placement service. Along with this vocational

focus, the organization runs a health awareness workshop and programs that teach first aid, literacy, money management skills as well as music and drama.

Since much of REDS efforts center on child waste pickers, the organization operates a street outreach program. The program allows REDS to take on an advocacy role, lobbying for the rights of children and waste pickers. In addition, it permits REDS to act as a liaison between the police and child waste pickers. Along with these services, the outreach program provides family counseling and non-formal education programs.

References: Furedy (1992, 1993); UNICEF (1999, October 12).

4.3.17 Agent of Change: Street Kids International (SKI)
Geographical Location: Bangalore , India
Nature of Intervention: Redirection

Narrative:

Street Kids International (SKI) is a Canadian, non-governmental organization. SKI collaborates with local-level organizations in Asia, Africa, and Latin America that work with street children. One of SKI's key areas of intervention is in the development of small business run by street kids. The objective of these projects are to assist street children in finding alternative ways to make a living.

One such community-based project that follows this mandate is the establishment of a bicycle messenger service in Bangalore (India) that involved street and waste picker children. SKI developed that bicycle courier project in cooperation with REDS (discussed above). The project was designed to provide waste picking children with alternative employment opportunities. In 1992, the messenger service was amalgamated with a private courier company.

Collaborating Organizations: REDS, Rotary International, Action Aid India, Mythri Trust, Rotary Club of Cantonment
References: SKI (1999, May 30); Furedy (1990)

4.3.18 Agent of Change: UNICEF
Geographical Location: Olinda, Brazil
Nature of Intervention: Redirection, Cooperation

Narrative:

In the city of Olinda (Brazil), UNICEF has introduced a project entitled "Garbage and Citizenship." The goal of the project is to educate the public about the inhumane circumstances that waste picking families exist in as well as to end these circumstances. The program is achieved through the implementation of policies that are intended to remove all children who survive as waste pickers from the city's dumps. UNICEF will assist these children in returning to school. In addition, UNICEF aids the city's adult dump pickers in forming associations and/or cooperatives. Through the establishment of waste picker associations, UNICEF believes that the waste pickers will collectively experience a rise in their income. The intended impacts of the project are the reduction of infant, youth and maternal mortality rates among the families of garbage pickers in the city of Olinda. Based on this model, UNICEF is currently implementing a national strategy that is meant to end child labor at all Brazilian dumpsites. It is estimated that 100,000 children survive through dump picking in Brazil (de Morais, personal communication).

Collaborating Organizations: Executive Power of Olinda
Reference: de Morais (1998)

4.3.19 Agent of Change: Metro Manila Council of Women's *Balikatan* Movement
Geographical Location: Metro Manila, Philippines
Nature of Intervention: Cooperation, Recognition, Provision

Narrative:

The Council of Women's *Balikatan* Movement, a non-governmental organization initiated a public education program known as "*Linis-Ganda*" (Clean and Beautiful) that promotes the value of separating waste materials at the source. The program aims at cleaning up the urban environment and extending the life of landfills by improving the collection of recyclable materials. It does this by changing people's attitudes and behaviors about waste, recycling, and waste pickers. The program is intended to complement the official solid waste management system. The program has been implemented under the auspices of three organizations: the Council of Women's *Balikatan* Movement, the Mathay Foundation, and the Metro Manila Federation of Environment Cooperatives.

The program works by organizing waste dealers into cooperatives. From past experience, it has been realized that waste dealers must be incorporated into the system. In the mid-1970's, the Ministry of Human Settlement implemented a recycling program that bypassed waste dealers, and the result was a price war between the "formal" and "informal" waste recovery systems. Therefore, each city in which the program operates has its own Environment Cooperative, the members of which are waste dealers. All Environment Cooperatives form an organization called the "Metro Manila Federation of Environmental Cooperatives." The Federation provides soft term loans to members. In addition, the cooperative establishes partnerships with large industries that consume secondary materials.

Waste pickers are incorporated into the program by working with waste dealers. The waste pickers have been renamed "Eco-Aides" and are assigned fixed routes in neighborhood districts. In addition, the Eco-Aides are given identification cards, uniforms and green carts. The Eco-Aides purchase source-separated, post-consumer materials from households and commercial establishments. They then sell these items to the waste dealers in the district in which the Eco-Aide works. Each waste dealer will have anywhere from two to five Eco-Aides supplying him or her with secondary materials. The waste dealer is responsible for providing the Eco-Aides with daily seed capital to buy source-separated materials, along with paying the social security benefits of the Eco-Aides with whom they have regular business contact. The Eco-Aides, however, are not employed by the waste dealers.

The Women's *Balikatan* Movement maintains that the income levels of waste dealers and Eco-Aides have risen. This achievement has resulted in the Eco-Aides gaining access to loans by the Department of Social Welfare and Development. Points of contention since the implementation of the program include the fact that local sanitation authorities resent the diminished role of sanitation officials, the decline of prices paid for secondary materials due to competition from imported products, and the high rents that waste dealers must pay to rent space in Metro Manila.

***Collaborating organizations*:** Philippine Department of Trade and Industry; Ayala Foundation
References: Women's *Balikatan* Movement (1999, March 2); Liberal (unpublished)

4.4 Summary of Case Studies

The specific interventions implemented by the agents of change are summarized in Table 4.2.

Table 4.2: Summary of the Specific Interventions Implemented by an Agent of Change

Agent of Change	Specific Interventions
SLU	The establishing of a cooperative, a source-separation scheme, public education/ awareness campaigns, warehouse facilities, and human relations training programs.
EXNORA	Collection of mixed waste at the source, and the renaming of waste pickers as "Street Beautifiers"
CEE South	Public education/awareness campaign, source-separation schemes, rename waste pickers "waste retrievers" and are given uniforms and identification cards, waste collection training, composting, literacy and vocational training
Cooperativa Recuperar	The establishing of cooperatives, loan schemes, academic scholarships, accident insurance schemes, a waste recovery facility, a waste collection company, a gardening business, and a cleaning businesses
CEMPRE	The provision of cooperative educational kits, and public education/awareness campaigns.
SOCOSEMA	The establishing of a cooperative, a cleaning business, a medical assistance program, educational programs, and training programs.
Saleng fund project	The provision of medical assistance, occupational safety training, financial assistance.
Fundación Social	The establishing of cooperatives, financial assistance schemes, social security system, a pension fund, schools, vocational training programs for women, health care services, and warehouses. Along with the provision of technical and management assistance.
EMLURB	The establishment of public education campaigns, source-separation schemes, cooperatives, micro-enterprise programs, literacy programs, health services, vocational training programs, health education programs, vegetable gardens, and the restriction of dump picking.
VMSDFI	The establishing of micro-enterprises for women, associations, loan schemes, a waste recovery project, a waster-drilling project, a housing/land acquisition program, and training and business management workshops. Along with the provision of legal assistance and advocacy lobbying.
Jeevodaya	The establishment of health clinics, public awareness campaigns, summer camps, along with educational sponsorship for child waste pickers
AMC	The establishment of solid waste collection services, and neighborhood clean up programs.
AIILSG	The establishment of a drop-in centre, a health facility, hygiene education programs, counseling services, daycare services, and literacy classes
Undugu Society	The establishment of recycling projects, and neighborhood clean up programs
GRASP	The establishment of a union for female waste pickers, credit schemes, educational classes, health services, home-based businesses, a vermi-composting facility, and a paper bag production business.
REDS	The establishment of a shelter, vocational training programs, health awareness workshops, literacy programs, first aid programs, money management workshops, music and drama programs, advocacy lobbying, counseling services, a courier service, and a attendant placement service
SKI	Funded the establishment of a bicycle messenger service
UNICEF	Established cooperatives, a public education/awareness campaign, and formal education programs.
Women's *Balikatan* Movement	Established a public education/awareness campaign, a source-separation scheme, cooperatives, soft loan schemes, and waste pickers renamed "Eco-Aides."

As Table 4.2 illustrates, the vast majority of organizations employ a multifaceted intervention strategy. The table further demonstrates that the goals of these organizations differ. Agents of change such as AMC and EXNORA are principally concerned about urban environmental management and solid waste collection. These organizations intervene by having waste pickers either become the collectors of mixed waste or source-separated materials in urban, solid waste management or recycling schemes.

On the other hand, agents of change such as REDS and SKI intervene by assisting waste pickers in finding alternative forms of employment. In contrast, agents of change such as VMSDFI and *Fundación* Social are of the opinion that waste picking activities are a vital component of the urban economy and intervene with the intent to improve the waste pickers' working and living conditions. These organizations are interested in economically viable ways to obtain higher returns from the selling of post-consumer materials, and through the establishment of profitable, waste-based enterprises.

It can be seen from the table that organizations such as *Jeevodaya* and AIILSG adopt a charitable approach in an attempt to aid waste pickers. This is achieved through social welfare support services such as medical assistance, soft loans, and educational programs

In this chapter, we have looked at the courses of action that have been initiated towards waste pickers by agents of change. In the next and final chapter, we will turn our attention to the question: does knowledge inform action? This will be done by examining the rationales behind the course of action undertaken by agents of change. The study will then conclude with a discussion of the impacts that accompany specific intervention strategies.

Chapter 5
Conclusions: Intervention Motives and Implications

This study has attempted to use the generalizations developed through an examination of "knowledge" to understand the characteristics of the types of "actions" that have been implemented by agents of change. Through the identification of these generalizations (Chapter 3) we are able to see how the implemented courses of action (Chapter 4) fit within the context of current thinking on waste picking. This endeavor has attempted to advance the notion that the motives driving a particular intervention strategy are determined by the answer to the question: what is the problem that requires intervention?

In the first section of this final chapter, I present my understanding of how waste pickers are perceived by agents of change. Three schools of thought are identified, which approach the issues from an environmental perspective, an economic perspective, or a humanitarian perspective. Through the identification of these three perspectives, we will be able to develop an understanding of the identified problem that requires intervention. Following this is a discussion of the congruence between knowledge and action. This discussion shows how knowledge and action have progressed relative to the three perspectives identified in the preceding section. Rather than concluding the study with a list of untested, and, therefore, hypothetical recommendations, some of the potentially negative impacts that accompany a specific course of action will be considered.

5.1 Conceptualizing Intervention Motives

The recommendations put forward by the scholars discussed in Chapter 3, and the implemented courses of action summarized in Chapter 4, bring to the forefront several distinct points of view. From these viewpoints, we may discern three primary perspectives of how waste pickers are perceived with respect to both "knowledge" and "action" and hence develop an understanding of the motives driving the intervention responses.

One such perspective may be termed "environmental management," as it approaches the solutions to the problems of waste picking through the recognition of waste pickers as custodians of the urban environment. The premise of the environmental management approach is that assimilating waste pickers into a regulated solid waste management system or a resource recovery program can solve the problems inherent in waste picking. This perspective is acknowledged and understood by its proponents as being a pragmatic response to urban service delivery and urban unemployment. To put it another way, the problems associated with waste picking and existing urban environmental problems can be concurrently solved through the creation of "legitimate" employment opportunities. As pointed out in Chapters 3 and 4, intervention prescriptions include decentralized community-based solid waste management and resource recovery schemes, or, alternatively, the privatization of waste collection services.

The rationale driving the second approach, the economic perspective, is the market value of post-consumer materials. The focus here is on improving access to the means of production as well as economic returns. Champions of this approach see the recovery industry as a mechanism of employment and even an engine of growth in low-

income countries and view those deriving an income from secondary materials as entrepreneurs who are valuable contributors to the urban economy. The objective of the intervention approach is to improve and build upon the survival strategies and the coping mechanisms of the urban poor. Interventions take the form of cooperatives, resource recovery facilities, and waste-based micro-enterprises. It is maintained that through these interventions waste pickers will be able to break the pattern of exploitation.

The emphasis of the third approach, the humanitarian perspective, is on the provision of social support services. This approach conceptualizes the poor as a marginalized segment of urban society. The premise is that because of their association with garbage, waste pickers are subjected to social exclusion and harassment by officialdom. Interventions, therefore, take a welfare-orientated approach to development and focus on "socially upgrading" waste pickers. Social welfare services include educational programs, medical assistance, soft loans, and vocational training. Often, the goal is to direct people, especially children, out of waste picking. The aim is to provide waste pickers with "life" and vocational skills in an attempt to end the vicious cycle of poverty.

The three perspectives provide the rationale for the types of interventions that are recommended by scholars and researchers as well as the courses of action implemented by agents of change. Table 5.1 lists the perceived problems, as defined by the agent of change, along with the prescribed intervention or interventions to the identified problems.

Table 5.1: Perceived Problems and Prescribed Interventions

Agent of Change	Perceived Problem(s)	Intervention Prescription(s)
SLU	Inadequate urban service delivery, environmental degradation, poor working conditions and earnings	Source Separation
EXNORA	Inadequate solid waste collection and unemployment	Community-based solid waste collection
CEE South	Environmental degradation and unemployment	Source-separation, waste collection, literacy and vocational training
Cooperativa Recuperar	Low incomes	Cooperative, social assistance
CEMPRE	Low incomes	Cooperative, public awareness campaign
SOCOSEMA	Low incomes, and lack of social assistance	Cooperative, social assistance
Saleng Fund	Low incomes and occupational health	Medical assistance, occupational health training, and soft loans
Fundación Social	Low incomes, no legal or social support	Associations, capital donations, social security systems
EMLURB	Environmental degradation and unemployment	Source separation through cooperatives, social assistance, literacy, health and micro-enterprise programs
VMSDFI	Poor working conditions, no legal status, and no secure tenure	Associations, soft loans, and micro-enterprise development
Jeevodaya	Poverty	Medical assistance, educational sponsorship, public awareness campaigns
AMC	Environmental degradation, inadequate urban service delivery	Cooperatives
AIILSG	Poverty	A drop-in centre, medical assistance, literacy classes, and day-care services
Undugu Society	Child welfare and environmental degradation	Micro-enterprise development, educational sponsorship
GRASP	Low incomes and poor working conditions	Unions, educational classes, health services, credit schemes
REDS	Child poverty	Shelter, vocational training, educational programs, counseling
SKI	Child poverty	Micro-enterprise development
UNICEF	Poverty	Cooperatives, education for children
Women's *Balikatan* Movement	Environmental degradation	Source-separation and cooperatives

As the table shows, SLU, AMC, and EXNORA define the problem of waste picking as being unemployment; the other problem that these three organizations are attempting to address is inadequate urban service delivery. The municipal agency, SLU

attempts to deal with the problem that falls within their jurisdiction, the delivery of public services, through the implementation of a source-separation scheme that gives the impression that it is concurrently addressing the issue of urban unemployment. AMC and EXNORA are attempting to address the same two problems, but are employing the "unemployed" as waste collectors and environmental custodians. As the table shows, CEE South and EMLURB are attempting to simultaneously solve unemployment and urban environmental management problems. For all these organizations and agencies, the environmental perspective helps in determining the intervention to be prescribed.

Agents of change defining the problems inherent in waste picking from the economic perspective, with specific reference to income generation, include, for instance, SOCESEMA, *Fundación* Social, GRASP, and CEMPRE. For these organizations, the prescription to the problem can be found in the formation of cooperatives or associations. It is useful to note that collaborating organizations working with SOCESEMA and CEMPRE are industries and businesses in the private sector (see Chapter 4).

For example, the non-profit organization CEMPRE was initially formed and is currently funded by companies that use post-consumer materials in the manufacturing stages of production. The companies include, but are not limited to, Coca-Cola, Mercedes-Benz, Nestle, and Pepsi-Cola. What are the implications of this? One could speculate that these companies are going to support intervention initiatives that will bring a direct benefit to them. The benefit being, in this case, that organized waste pickers will divert a larger volume of materials from the waste stream to be used in the manufacturing stages of production, and, thus, lowering the production costs for industry. The same reasoning applies to municipal agencies, such as SLU discussed above, that employ waste

pickers in publicly sanctioned solid waste and resource recovery schemes. These agencies are going to prescribe interventions that fall within their organizational mandates.

Humanitarian courses of action, such as those undertaken by REDS, SKI, the *Saleng* fund project', and AIILSG, prescribe interventions that attempt to address poverty. The assumption is that through intervention prescriptions such as literacy classes, vocational training programs, and credit schemes the lives of waste pickers can be improved.

The discussion of the environmental and economic perspectives reveal a fundamental difference in how waste picking as an occupation is perceived by the two perspectives. Interventionists classified under the environmental perspective, EXNORA and CEE South, for example, tend to conceive waste pickers as being unemployed. The term "unemployed" implies that one is not engaged in a market-oriented occupation.

On the other hand, agents of change, such as GRASP and SOCSEMA, that approach the issues from an economic perspective conceptualize waste pickers as being "underemployed." Often, the criteria used to define underemployment are low incomes and low productivity. As Bromley (1997) notes, the problem with these two criteria for defining underemployment is that they are often the same criteria used to define poverty. As stated in Chapter 2, full-time waste pickers work approximately 40 hours a week. One can hardly consider a person who works 40 hours a week "underemployed," much less "unemployed." However, as we can see, different conceptualizations of waste picking as a labor process produce different intervention approaches. If waste pickers are viewed as being "unemployed" then the prescribed intervention is employment. On the

other hand, if waste pickers are seen as being "underemployed" then intervention prescriptions attempt to increase earnings and productivity.

5.2 Knowledge and Action

The findings of this study show that there is a correlation between the scholarly recommendations put forth in Chapter 3, and the implemented courses of actions summarized in Chapter 4. The scholarly recommendations prescribe interventions that take into account economic rationales, social development objectives, and urban environmental management considerations. Specific prescriptions include cooperatives, decentralized resource recovery facilities, source-separation schemes, educational and vocational training programs as well as the establishment of waste-based micro-enterprises. In Table 5.1, one can see that the courses of action taken by the different agents of change are in aggregate agreement with the scholarly recommendations. From a comparison of recommendations outlined in Chapter 3 and the courses of action summarized in Chapter 4, an inference can be drawn that there is congruence between how the identified issues that warrant intervention should be dealt with, as suggested by scholars, and how they are being dealt with in practice.

The development of knowledge and the implementation of action, in fact, have progressed relative to the humanitarian, economic and environmental perspectives discussed above. Early intervention strategies often focussed on directing people out of waste picking as well as providing waste pickers with social assistance (Furedy 1997), and early writings discussed the poverty that had led people to turn to waste in order to survive (Taira 1969). By the mid-1980's, the economic perspective had begun to emerge

as a credible intervention strategy. The research of Birkbeck (1978) showed that waste picking had strong linkages with the market economy (see Chapter 2). Reference manuals (e.g. Vogler 1981) began to appear that explained how to start and operate waste-based micro-enterprises. Academic writing (Furedy 1984) discussed the survival strategies and coping mechanisms of the urban poor, and lobbied for the recognition of the fact that waste picking generated employment opportunities (Blincow 1986; Baldisimo and Lohani 1988; Keyes 1982). Non-governmental organizations began to implement pilot projects that assisted waste pickers in the development of waste-based enterprises (e.g. Besta *et al.* 1991; Furedy 1990). During this period, social issues regarding solid waste management put waste pickers at the center of solid waste management debates (Furedy 1989). Academic discussions focused on recognizing the role that waste pickers played in resource conservation (Bubel 1990). This was accompanied, in the late-1980's, by discussions regarding the function that waste pickers performed in managing urban solid wastes. Attempts were made to incorporate waste pickers in decentralized resource-recovery processing facilities (Sicular 1989; Poerbo 1991).

Current mechanisms that allow for the diffusion of information between "knowledge" and "action" include, *inter alia*, conferences, workshops, and Internet databases. For instance, the 1996 Cairo workshop on "Micro and Small Enterprises Involvement in Municipal Solid Waste Management in Developing Countries" brought together scholars, researchers, and development specialists with NGO directors, government representatives, and representatives of international development and aid agencies. An intention of the workshop was to promote the transfer of information

between the various interest groups. The workshop provided a forum for EXNORA, *Fundación* Social, CEMPRE, the *Undugu* Society, and the Vincentian Missionaries Social Development Foundation Inc., to present case studies on the courses of action that these organizations had taken in their attempts to assist waste pickers (Brown and Christen 1996). The workshop served as a venue for the dissemination of information regarding municipal solid waste management and waste-based micro-enterprise development.

As this study has shown, there is a consistency in the recommendations put forth by the scholars discussed in Chapter 3 and the implemented courses of action summarized in Chapter 4. Current discussions tend to promote one of five specific intervention prescriptions:

1) have waste pickers become the collectors of source-separated materials (For agents of change employing this approach see discussions regarding SLU, CEE South, EMLURB, and the Women's *Balikatan* Movement.)
2) have waste pickers become garbage collectors in community-based solid waste management schemes (EXNORA is an example of this approach.)
3) have waste pickers become environmental custodians who are responsible for cleaning up the urban environment (Agents of change employing this approach include AMC, and the *Undugu* Society.)
4) establish waste picker cooperatives (Interventions such as those implemented by CEMPRE, SOCOSEMA, *Fundación* Social, *Cooperativa Recuperar*, VMSDFI, and GRASP follow this strategy.)

5) direct children out of waste picking, either through vocational training or education programs (REDS, SKI, *Jeevodaya*, and UNICEF are examples of this course of action.)

The final section of this study will detail some of the impacts that are produced by a given course of action. The study will then conclude by arguing that the prescribed interventions are simply promoting market means in an attempt to achieve humanitarian ends.

5.3 Intervention Implications

Any intervention prescription carries with it a number of impacts that may have not been intended. In other words, the apparent goals of a specific course of action may, in practice, produce negative impacts. This section will discuss some of the negative impacts that may accompany specific courses of action.

In many low-income countries, waste is often inadequately collected and disposed of. This is often due to financial constraints as well as the organizational structure of local authorities. In other words, governing bodies may lack the means to adequately supply urban services, such as solid waste collection. As a result, decentralized or community-based solid waste management schemes are currently being proposed and implemented as a way to address the waste collection problems that many low-income cities and neighborhoods are confronting (see Pfammatter and Schertenleib 1996; van de Klundert and Lardinois 1995). Agents of change with an environmental perspective often approach the problem from this viewpoint. The appreciation of the "role" that

waste pickers play in resource conservation is the impetus for their incorporation into community-based solid waste management schemes. [26]

On could argue, however, that agents of change undertaking this approach are "romanticizing" the role of waste pickers in urban environmental management. If the intent is to reduce the environmental impacts of waste disposal, there are more humane and efficient ways to achieve this objective. As was pointed out in Chapter Two, waste pickers participate in resource recovery for economic reasons. One may advance the notion that the majority of waste pickers are indifferent about, or simply unaware of their contributions to the urban environment.[27] The environmental rhetoric suggests that certain unrealistic expectations have been introduced into the current thinking on solid waste management and resource recovery in low-income countries.[28] In reality, agents of change that have an environmental perspective are only incidentally assisting waste pickers.

As noted elsewhere, a number of the agents of change motivated by environmental considerations promote source separation as a means for addressing the inherent occupational hazards of waste picking. It is maintained that source separation provides higher quality recyclables, limits the social stigma of picking materials from mixed and contaminated wastes, and reduces many of the occupational health risks of waste picking. Interventions introduced by, for example, SLU, CEE South, and the

[26] See Chapter Two for a full discussion of this point of view.
[27] For example, the *Indian Express* reported that in Mumbai (India), the city's waste pickers were no longer collecting a particular kind of plastic bag because it was of poor quality and, therefore, the economic return was not worth the effort. The thin plastic bags ended up clogging the city's sewer lines. The problem became so bad that the government proposed a ban on the production of thin plastic bags (Unnithan 1998).
[28] In analyzing Bangalore's (India) recovery industry, van Beurkering (1994) found that itinerant collectors, households and factories contribute the same volume of materials to waste dealers as waste pickers do. In fact, the secondary materials supplied by these other groups are more homogeneous, less contaminated and of better quality.

Women's *Balikatan* Movement attempt to assist waste pickers through the restructuring of the labor process. In other words, waste pickers become itinerant collectors who collect materials at the source. An implication of source-separation schemes is that by design these schemes are meant to reduce the amount of post-consumer materials in the waste stream. This greatly impacts the earning potential of waste pickers not incorporated into the scheme. Moreover, it is the lack of source separation that generates countless employment opportunities. The restructuring of the labor process brings about a conflict between urban environmental management and the urban labor market. In other words, environmentally driven courses of action that restructure the labor process may reduce employment and income earning opportunities for the urban poor.

The establishment of cooperatives can also negatively impact the earnings of and employment opportunities for individual waste pickers. Briefly stated, a consequence of the implementation of such interventions is that temporary employment opportunities are lost. As discussed in Chapter 3, a number of case studies indicate that people resort to waste picking during times of personal hardship. Waste picking is turned to because of its relative ease of entry. This suggests that waste picking is often undertaken as a survival strategy and coping mechanism. For certain segments of urban society, it is a "stop-gap" measure which functions as a *de facto* safety net that sustains one in times of personal turmoil. Therefore, the "legitimization" of waste picking through any means removes the "safety net" function of waste picking, since cooperatives will make it more difficult for those who turn to waste picking as a "safety net" to gain access to the means of production.

In addition, as Abad (1991:276) observed in Metro Manila, the establishment of organized cooperatives resulted in a smaller "garbage catch per family" which, in turn, reduced the income earned by an individual or a household. Intervention strategies that are designed to stabilize the occupation by increasing its economic returns may also result in an influx of new waste pickers. This too could negatively impact the "garbage catch" of a full-time waste picker.

With specific reference to women, Huysman (1994a), among others (Muller and Schienberg 1999, March 14), maintains that when work and economic conditions improve through the establishment of cooperatives, for example, or when waste picking is consolidated into solid waste management schemes, women are often forced out of the occupation by men. Because of their "triple role" within the family unit (see Chapter 3) women may be unable to take jobs if the jobs become "legitimized." It could be argued that for many waste pickers, especially single mothers, it is the marginality of the occupation that ensures their survival. The displacement of waste pickers through the reconstructing of the labor process would further increase the unemployment and underemployment problems that many low-income countries are currently confronting

Certain ramifications also accompany intervention prescriptions that are designed to redirect people out of the occupation. That is, redirection courses of action do not always achieve their objective. Research has shown that waste pickers guided out of the occupation through, for example, vocational training programs still undertake waste picking on a part-time basis (Abad 1991). This is often done in order to augment the household's income. In addition, simply directing people out of waste picking does not

guarantee an end to the occupation. As pointed out in Chapter 3, the structural nature of poverty ensures that others will replace the beneficiaries of redirection schemes.

In light of these findings, it can be argued that the intervention prescriptions examined in this study, at times, contradict their intended goals, as these goals apply to waste pickers. These intervention prescriptions, may, additionally, produce further inequities. For agents of change, the environmental, economic, and humanitarian perspectives help in explaining the conditions of poverty as being a result of imperfect labor markets, deficient government policy, and the exclusion of certain segments of society from the economy. The perspectives are used to advocate intervention recommendations for structural and institutional changes, which by design would not call for the complete restructuring of a nation's political system. Therefore, the prescribed interventions are an attempt to deal with the balance of interests between distinct segments of a society. That is, the prescribed interventions give the impression that the poor are being assisted without harming the interests of the social, economic, and political elite. Bromley's critique of the concept of the "informal sector" parallels what is occurring here. The prescribed waste picking interventions appear "to offer the possibility of 'helping the poor without any major threat to the rich'" (Bromley 1979:1036). One could say that the intervention prescriptions are simply a compromise to meet the growing pressure to redistribute wealth while maintaining the economic, social, and political *status quo*. The interventions are, therefore, a compromise in the competition over societal resources between the rich and the poor.

The prescribed interventions presented in this study can be compared to similar discussions on the broader international development stage. In other words, a clear

interrelationship exists between discussions of intervention prescriptions to solve the problems of waste pickers and other contemporary development debates regarding poverty alleviation, child labor, the deregulation and privatization of public services, micro-enterprise development, gender equity, and employment generation schemes. Waste picking provides another forum for different ideological perspectives to debate the best way to bring to the poor, as Bromley (1979:1037) once again so insightfully puts it, the "benefits of development."

The objectives of an intervention approach, whether motivated by environmental, economic, or humanitarian concerns will by no means put an end to people harvesting post-consumer materials from mixed and contaminated wastes. As long as there is a market for post-consumer materials, an abundant supply of post-consumer materials in the urban waste stream, and people willing to undertake the work of recuperating post-consumer materials, the occupation will exist. That is not to say that the programs and projects examined in this study should be abolished. Waste pickers should continue to be assisted, but agents of change must take into account and attempt to address the implications of their given course of action.

The interventions presented in this study, however, are simply short-term measures. To properly address the inherent problems that accompany waste picking will require a fundamental change in how societal resources are redistributed. Therefore, changes, which induce fundamental improvements in the lives of waste pickers, will have to be formulated in the larger political arena. Until such structural changes occur, agents of change need to consciously attempt to identify and mitigate the potentially negative impacts that accompany any given course of action.

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Appendix A

AIT (Asian Institute of Technology)
http://www.ait.ac.th/

CEMPRE
http://www.cempre.org.br/

CWG (Collaborative Work Group)
http://www.melissa.org/cwg/

EXNORA
http://indiaa.com/exnora/

Internet – Research and Information Tool
http://www.skat.ch/ud/upm/publications/internet_tool/frameset_tool.htm

SANDEC (Water and Sanitation in Developing Countries)
http://www.sandec.ch/

SKAT (Swiss Centre for Development Cooperation in Technology and Management)
http://www.skat.ch/

SKI (Street Kids International)
http://www.streetkids.org/marknotes.html

Solid Waste-Management-Recycling (mailbase)
http://www.mailbase.ac.uk/lists/solid-waste-management-recycle/

Street Kids: Asia and South Pacific
http://www.abepet.com.br/recicl.html

UNCHS (Best Practices Database)
http://www.bestpractices.org/

Urban Management Program
http://www.sdnp.org.lb/ump/index.html

WEDC (Water Engineering and Development Centre)
http://www.lboro.ac.uk/departments/cv/wedc/