

## Chapter 1: Introduction

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*This chapter provides an introduction on the research topics, and several approaches within the development debate towards these topics are discussed. Subsequently, the research questions are formulated, as well as a list of definitions, and the methodologies used in the research are reflected. Finally, the structure of the research will be given.*

In many developing countries, extensive waste economies exist. Waste pickers intervene in the waste trajectory from waste generation to final disposal, and various materials are recovered for recycling, re-use or composting. While various actors active in waste recovery are motivated by different reasons, they all share a common belief; waste is a resource. Furedy (1992) has labeled this concept as 'resource recognition'.

A recently developed concept is integrated solid waste management. This approach aims to integrate several actors, governmental units, the private sector and civil society, in one system in order to achieve common goals. Derived from ongoing issues with proper solid waste management, it intends to combine the strengths of several actors in order to achieve appropriate solid waste management. Besides providing waste service, such as proper collection, transportation and disposal to all people, it aims on generating income for those whose livelihood depends on waste materials. It is believed that the private sector involved in waste collection, recovery and disposal can contribute to a great extent in integrated solid waste management. Although it might seem as an utopian idea, several institutions already supported this idea, the World Bank among others (Cointreau-Levine, 1994).

However, before integration can take place, understanding the way the private waste sector operates is necessary to find out to what extent a private sector is active in current waste recovery and recycling initiatives. This is where this research steps in. It intends to provide an overview on one part of the waste economy, namely the private sector engaged in waste recovery, in one particular city. Most research concerning the private sector and solid waste management covered metropolitan areas because waste related issues are believed to play a major role in these areas, and the abundance of the private sector in waste economies. On the contrary, medium and small sized cities gain little attention in this debate. Therefore, research on the private sector in a medium sized city is necessary. With around 450.000 inhabitants, Bacolod City, the Philippines is such a medium sized city.

Why is this city chosen for performing the research? Previous research has already studied the way the municipality of Bacolod City manages solid waste. As private waste collection, transportation and disposal appeared not to be existing in Bacolod City, the choice was made to study the private waste recovery sector. Several waste recovery actors were already identified in earlier research, however, no systematical attempts were made to study this sector more thoroughly.

Before explaining general characteristics of the private waste recovery sector, several changes in thinking about development and waste in particular are discussed.

### **1.1 Shifting paradigms in 'waste approaches'**

Traditionally and almost by definition, waste management is perceived as the responsibility of the local government. However, the failure in many developing countries of urban local governments to handle the waste issues properly has led to new approaches to combat these solid waste problems.

These changes in thinking about waste management and developing countries arise from other developments taking place on broader scale. Global changes that can have influence

on waste management are: increased environmental awareness, decentralization and Structural Adjustments Programs, informalization of the economy in developing countries, democratization, trade liberalization, and changing consumption patterns (Lardinois and Furedy, 1999). These developments and their effect on waste recovery systems will be discussed in this paragraph. The following possible changes in waste recovery systems will be described: recognizing the possibilities of waste materials, the inclusion of the (informal) private sector within solid waste management systems and the development of the concept of Integrated and Sustainable Waste Recovery (ISWR). It must be stated here that developments that could change the concepts of solid waste management, can also influence waste recovery systems, and vice versa.

#### *Increased environmental awareness*

As concepts as sustainable development and environmental planning have gained more and more attention within the international development debate, issues concerning waste management are also put on the main agenda of development organizations and international development summits. New ideas and approaches to challenge solid waste related issues have been constructed, and traditional ways of waste management are questioned. These changes in perceiving environmental issues have resulted in realizing the seriousness of waste related issues, a greater benevolence from local authorities to recognize certain issues and the willingness to find proper solutions for waste problems (Lardinois and Furedy, 1999).

#### *Decentralization and Structural Adjustments Programs (SAPs)*

A process which is taking place in political systems in various developing countries is decentralization. Decentralization is the transformation of political responsibilities from the national, central government towards the government on municipal level. Also, decentralization can take place within the municipality: the shift in responsibilities from municipal governance to the involvement of even lower levels of decision-making in the municipality. In this way, local governance or Community Based Organizations (CBOs) can help to pin-point certain waste related issues and help to find an adequate solution by providing local knowledge of the area (Lardinois and Furedy, 1999).

The process of decentralization is strongly embodied in the objectives of the Structural Adjustments Programs (SAPs), set up by international financial institutions such as the World Bank and the International Monetary Fund (IMF). The concept was imposed on developing countries by these institutions to achieve debt relief. The SAPs aimed at transforming state controlled economies to the market based economies. Major cuts in governmental employments were made to save on state expenditures. Public services were taken over by private enterprises and costs of living rose subsequently, mainly in urban areas (Bird, 2004). As a result, the people formerly employed by the state were forced to create other income generating opportunities where possible.

#### *Informalization of economy*

Although the SAPs resulted in an expansion of the informalization of the urban economy, this was already the case in preceding decades. From the 1960s onwards, large rural-urban migration caused urban areas in developing countries to grow rapidly. Rural migrants found themselves in an employment lottery where only a few would win. However, rather than returning to the rural origin these people established themselves in the city, creating livelihood possibilities where possible. Although at first the informal sector was interpreted as lowly and small-scale, it was recognized as efficient and profitable later on, using simple and inexpensive production methods (Emmery, 2005).<sup>1</sup> A large part of the private waste

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<sup>1</sup> The concept 'informal economy' was first used in the 1970s (Emmery, 2005)

recovery sector takes place in the informal part of the economy, meaning that transactions are not registered officially by governmental institutions. The role of rural migrants in the waste recovery sector will be discussed later in this chapter.

#### *Democratization*

The process in which the population is involved to a greater extent in the decision-making system forms a fundamental part of democratization. The population can influence local scale policy by setting up a system of civil society, in the form of Community Based Organizations (CBOs) (also known as Peoples Organizations) and Non Governmental Organizations (NGOs). These organizations can establish contacts between local authorities and the community, and create support as a mediating actor between both parties. This development is considered to be extremely important regarding informal recovery systems. As informal recovery systems are often perceived by local government as un-modern and unhygienic, these authorities often show reluctance to stimulate these activities. The establishment of cooperatives by the informal waste recovery system usually is a way to create or strengthen a political position and to negotiate with local officials (Medina, 2000).

#### *Trade liberalization*

A sudden rise in prices can result in a rush towards the recovery of certain materials. Recycling initiatives can be stimulated by national authorities when it appears that basic resources can be retrieved from within own country rather than to import these resources. Another dimension is that international fluctuations of world market prices can exert influence on local waste material markets. A sudden drop in internationally set prices can result in serious cuts in income for those whose livelihood depends on waste recovery.

#### *Changing consumption patterns*

It is strongly believed that the waste generation is correlated to the level of prosperity within a country. As the average income in a country goes up, consumption grows and waste generation will rise subsequently. Before, waste in developing countries existed predominantly out of organic materials, nowadays other materials have entered in great volumes: plastics, paper and tin cans. These materials are highly useful for the recycling process. This change in waste composition can affect recycling initiatives in developing countries.

#### *Waste possibilities*

The increased environmental awareness, in developed countries but in developing countries as well, has led to new approaches towards proper solid waste management. This development is embodied in the concept of 'recourse recognition' (Furedy, 1992). Resource recognition is defined here as the increasing awareness of the value of a certain resource, in this case 'waste' materials. Of course, the term 'waste' is arbitrary in this point, as what is interpreted as waste by the one discarding it, is regarded as a resource by the person recovering it.

From the environmental point-of-view, recovery, recycling and composting processes should be initiated to take full advantage of this opportunity. These concepts are implemented in many cities in developed countries, through government regulation and citizens' supporting activities. In cities in developing countries this is often not the case and other elements of waste management are stimulated by the authorities, especially the improvement of conventional technical waste systems, such as in collection, transportation and final disposal of solid waste materials (Furedy, 1992).

However, the extensive waste recovery systems are highly adapted to local circumstances and have the ability to respond effectively to local markets. This sector operates merely for economic benefits, and environmental motives are usually not taken into account. The cooperation between this private waste recovery sector and government is perceived by many waste experts as the following step towards a more effective solid waste management system (Haan, Coad and Lardinois, 1998).

Environmental organizations on the other hand tend to focus on alternative ways to imply the idea of 'recourse recognition' to create a more effective solid waste management system (Furedy, 1992). These alternatives set up by CBOs or NGOs are usually project based, where the focus is laid on small-scale, community level initiatives, and goals are, besides the change towards a more efficient waste management system, to generate social and environmental benefits. These benefits include: providing help to those people whose livelihood is partially or solely based on waste collection or recovery by creating better and safer working conditions; to stimulate waste separation at the source to make better possibilities for recycling and (decentralized) composting; support intersectoral cooperation between community, the private sector and local governance; provide environmental education; and to change or formalize informal waste recovery and recycling to other practical waste recovery activities (Furedy, 1992).

It could be underlined here that the intervention of CBOs and NGOs to generate possibilities from waste materials is extremely important in this sense. These institutions have the task to make certain concepts to be recognized by government and community and to stimulate changes from conventional methods to alternative ideas of dealing with urban waste where possible and needed.

#### *Integrated and Sustainable Waste Management*

A further step towards effective solid waste management in developing countries has been described by others as 'Integrated and Sustainable Waste Management' (ISWM). Klundert and Lardinois (1995) write:

"Point of departure is that the highest level of service and maximum benefits is gained when the municipality sees its solid waste management mandate and the responsibilities clearly, but nevertheless can make use of the strengths of the various other actors" (in Klundert and Lardinois, 1995, p. 5).

The following actors are recognized: the municipal government, the formal private sector, the informal private sector and CBOs/NGOs. Theoretically, by integrating all actors into one solid waste management system, a profitable and sustainable situation should arise for all participating actors. This concept is generally accepted in the solid waste management debate. The World Bank also stimulates this approach by setting up projects in various developing countries. Important principles of ISWM are, according to the World Bank:

- ISWM can function as a showcase for qualitative, transparent governance and to emphasize responsibilities at community level
- ISWM is based on economies of scale; using properly maintained equipment; using equipment and techniques adapted to local circumstances
- ISWM ensures long term financial sustainability by setting up: mechanisms of cost-recovery, schedules with costs and services for all parties involved
- ISWM conserves natural resources by stimulating waste decreasing possibilities, waste recovery and recycling as near at the source of waste generation as possible
- ISWM includes public participation in its implementation; environmental issues are stressed to local communities, the value of waste is underlined and feedback is asked from communities
- ISWM embodies environmental safe disposal sites where waste pickers can conduct operations safely

- ISWM seeks proper implementations of separation at the source, waste recovery and recycling, an example is the requirement of separate waste transportation
- Strategic long term planning is a fundamental element of ISWM; for example the planning of a major environmental secure dumpsite, also known as landfill
- ISWM should have the institutional autonomy and authority to implement its principles effectively
- ISWM invites private sector involvement; holding on to minimum standards of environment, health and safety for all parties involved  
(Cointreau, 2001)

The concept of ISWM integrates several aspects of waste management and the private sector that evolves around the waste flow. However, some major barriers are believed to hinder the concept of ISWM. The following are identified as key issues or constraints.

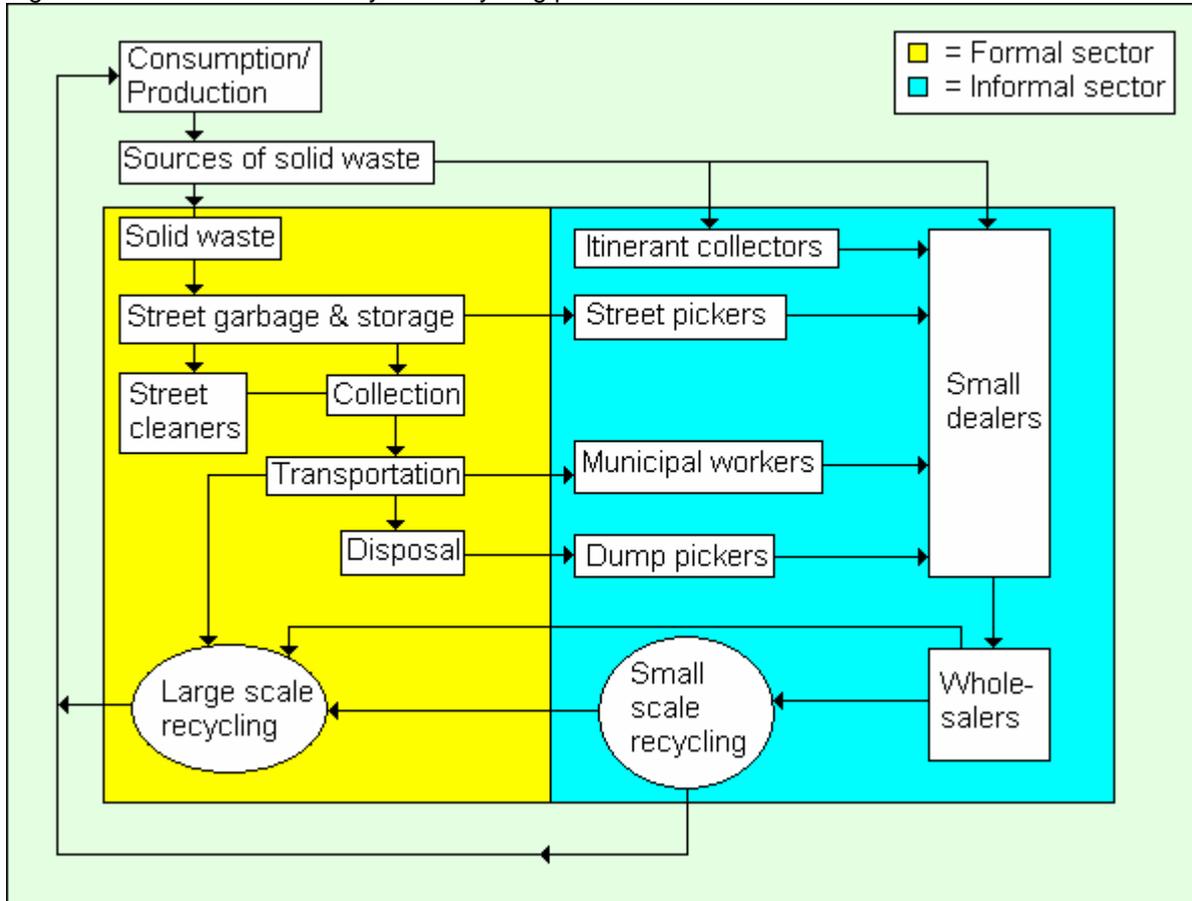
First, financial constraints within all the sectors are believed to have negative effects on the concept. Second, because several actors with different backgrounds and objectives are included in the model, the degree of trust between the groups is expected to be low. Also, one group might not want to be associated with another group's image. A third point which is highly correlated to the former remark is that official recognition of the existence of informal sector activities is often a sensible matter for governmental institutions. And fourth, informal waste recovery participants might show resistance towards the formalization process the concept has in mind (Klundert and Lardinois, 1995).

It becomes clear from this section that several changes in thinking about development and the environment, as well as global changes in behavior, have lead to various approaches towards solid waste recovery activities in developing countries. But what is the solid waste recovery sector? What are general characteristics of these actors on a world wide scale? These questions will be answered in the next paragraph.

## 1.2 Waste recovery systems in developing countries

As mentioned, extensive waste recovery sectors exist in many developing countries. The general structure of the system is that during its trajectory from generator to final dump site, various actors extract materials. Later on, these materials are used for small or large scale recycling. Baud and Schenk present the following schedule:

Figure 1.1 Solid waste recovery and recycling processes



Source: Figure adapted from Baud and Schenk, 1994

First, there are people who go around to gather and buy waste materials from households and other waste producers, the 'itinerant collectors'. Second, 'street pickers' retrieve valuable materials from waste scattered on the street, or from garbage waiting for municipal or private collection. During official collection and transportation, municipal or private workers also recover materials in some cases. After the waste has been disposed on a dumpsite or any other place, dump pickers attempt to find any materials holding a certain value. The materials find their way to small dealers, whole-salers, small scale recycling businesses and large scale recycling factories. New products are made in these factories, and the process will wind up again. A note at the schedule is that different terms are used for the actors involved. Baud and Schenk use 'small dealers' and 'whole dealers', while these traders in waste materials can also be referred to as 'junkshops'. In this thesis, the term junkshop will be used as these establishments are called this way in Bacolod City. The same is the case for 'itinerant collectors', which are named 'runners'. Another remark is that while the municipal workers are part of the formal sector during collection of waste, they are involved in the informal sector during recovery of materials when they have the means to sell the retrieved materials.

This paragraph will extend on the recovery represented in the structure. First, several characteristics of the people who are involved in waste picking will be described and discussed. Attitudes from governments towards these people will also be included. Second, the operations of the small dealers and whole-salers will be provided.

### ***Waste picking in developing countries***

Informal waste recovery forms a livelihood for many urban residents in third world cities. The extraction of valuable materials from the waste flow by mostly urban poor happens predominantly on the streets and on garbage dumpsites, but on other sites where garbage can be found as well. These waste pickers, or scavengers which has a more negative undertone, are usually associated with dirt and diseases, due to the daily contact between these people and waste materials. Also, they are perceived as a group with the lowest social status (although waste pickers are not the poorest of the poor) and sometimes being labeled as a symbol of backwardness or believed to be involved in criminal activities (Medina, 1997). Traditionally, scavenging has always been a task performed by minorities or outcasts. Slaves, as well as gypsies and migrants have been active in collection and recycling of waste. In Muslim countries, non-Muslims are involved in collection because contact with waste is considered as impure. In India, the *harijans* caste are also known as 'the untouchables', because of their occupation as a waste collector (Medina, 2000).

However, this section provides a general overview on the waste picking activities. Then a debate will follow on how to define the group of waste pickers. Several aspects of waste picking systems are discussed. These aspects are the following: economic aspects, socio-cultural elements, the degree of organization, and socio-political context. Subsequently, hierarchal systems between solid waste recovery participants will be discussed.

### ***Waste picking in practice***

The extraction of valuable waste materials from the residual waste happens on several locations within the waste flow, by different types of waste pickers. Medina describes the following locations, activities, and waste pickers:

1. Source separation at the household generating waste materials
  2. Collection crews sort recyclables while on their collection routes
  3. Informal collectors retrieve recyclables prior to the disposal of the refuse they pick up
  4. Itinerant buyers purchase source-separated recyclables from residents
  5. Waste pickers retrieve materials at the communal storage sites, as well as from commercial and residential containers placed curbside
  6. On the streets or public spaces, picking up litter
  7. In vacant lots, where garbage is dumped, as well as in illegal dumps
  8. In canals and rivers that cross urban areas carrying materials dumped upstream
  9. At composting plants
  10. At municipal open dumps
  11. At landfills
- (Medina, 2000)

Waste picking consist predominantly out of manual labor. Waste pickers sometimes use a pick axe to delve into the waste and to retrieve the materials outside the arms reach. On the streets, street pickers or itinerant waste buyers use a cart on wheels, a tow device or a sack to go around and to collect a volume as large as possible. In some cases carts or other tools which are relatively expensive, are provided by a junkshop.

### *Group characteristics and waste picking systems*

Although scavenger practices vary over the world, some attempts have been made to classify the group of scavengers or waste pickers world wide. Medina uses the following generalizations:

- Waste pickers are relatively poor
- Waste picker have a low social status
- The waste picker population consists mostly out of (rural) immigrants
- Waste picking is considered as an 'informal sector' activity
- Waste picking can provide economic and environmental advantages
- Besides benefits, waste picking does has its social costs
- Scavenging is an sign of fundamental poverty in developing countries
- Scavengers supply raw materials to industry and the small-scale manufacturing sector
- Organic materials extracted from the waste flow are used by waste pickers as fodder for livestock or as fertilizer for crops (Medina, 1997).

Although this list may seem complete, it is considered by other researchers as inappropriate to describe all scavengers around the world. Nas and Jaffe criticize:

"Though the empirical grounds on which his list is based are not unsound, his overview is neither comprehensive nor universal and though we do not advocate a particularistic, merely descriptive approach, we believe that too little research has been done to make such broad assumptions." (Nas and Jaffe, 2002, p. 339)

They rather support a definition used by DiGregorio in his research on waste pickers in Vietnam, where he states that scavengers can be characterized by two generalizations: scavengers recognize waste as a resource and most scavengers are perceived by other people as a disgrace (DiGregorio, 1994).

Gender issues are another point of interest which are not referred to at the list of Medina.

Although it is generally accepted that the majority of the waste pickers are male, there are some situations where this is clearly not the case. Waste picking is usually an activity of marginalized population groups, and female and children are considered as more vulnerable than men. Generalizations about gender and waste picking activities should therefore be made with extra care.

Clearly, there are differences in opinion on how to define a waste picker or scavenger.

As described in figure 1.1, waste picker groups are not homogeneous. In this thesis, several types of waste picking are studied: waste pickers on the dump site, waste pickers who recover waste from the streets or from households going door-to-door, municipal workers who retrieve materials during performing their job. Therefore, the distinction will be made here between the 'dumpsite waste pickers', 'street pickers' and 'itinerant collectors'. Although some households, individuals, or businesses also recover waste materials to generate income, for re-use or to cover costs, these groups will not be included in the study of these kinds of activities.

Another more ethical issue is: are scavengers and waste pickers the same? In the international literature both are used interchangeably, however, in this research paper the term waste picker is used above scavenger, because the latter carries a negative connotation.<sup>2</sup>

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<sup>2</sup> My opinion is that the activities of the waste pickers deserve respect. Therefore, the term 'scavenger' and 'scavenging' would seem inappropriate to refer to these activities.

### *Economic aspects of waste picking*

Overall, informal waste picking can be interpreted as a response to fundamental urban poverty. In an urban area in a developed country where it's hard to get a job as well as starting capital, urban poor use that what they do have: human labor. The informal methods of waste recovery are usually labor intensive, in contrast to developed countries where such activities are predominantly capital-intensive. Developing countries often lack capital, but cheap labor is generally present in large amounts. The informal recovery system is characterized by a great extent of efficiency, in the sense that collection methods are well adapted to the local physical situation, and is greatly interrelated to the local supply-and-demand system (Nas and Jaffe, 2000). An example on how efficient the informal sector works: in the Philippines the city government of Manila, started a project to recycle urban waste through the use of new waste collectors. It appeared that the prices of the formal waste pickers were too high to compete with the existing informal waste sector, and the project failed rigorously (Lardinois and Furedy, 1999).

Although it is believed that waste picking can produce environmental and social benefits, people involved in waste picking are mainly driven by individual economic concerns. An advantage of waste picking is that it can provide someone with an immediate source of income.

Income of waste pickers in developing countries is considered low. It is argued that poverty among the waste pickers can be largely accounted for the low prices they get from middlemen. Middlemen buy the materials at low price and in turn sell their stocks for a relative higher price to other middlemen or the recycling industries. This exploitation can sustain in some cases because there's only one buyer. This situation is referred to as a monopsonistic market, as opposed to a monopolistic market, where there's only one seller (Medina, 2000).

### *Socio-cultural elements*

In the international literature it is commonly accepted that the social status of waste pickers is regarded as very low. Generally, the public sees the waste picker population as unhygienic, or perceives waste pickers even as thieves. It is believed that the waste pickers see themselves as the lowest part of society, feeling insecure about their actions. Another element which can fortify this lack of self-esteem is the general low educational level of the waste pickers.

In some cases most waste pickers are migrants from rural areas. Waste picking activities are accepted by rural migrants in order to survive. Those people can end up specializing in the waste recovery sector. And as mentioned, waste pickers groups often exist predominantly out of ethnic minorities. As these groups are usually more vulnerable, they are more likely to be pulled towards the informal waste sector (Furedy, 1992).

### *Waste picking organizations*

In order to strengthen the overall position of the waste picker, various attempts in multiple countries have been made to set up waste picker cooperatives. The objectives are numerous: to give the waste picker community a voice in urban politics, to function as trade partner with large junkshops or recycling plants (so that the middleman will be excluded from the transaction), to set up a financial network in case of emergency, to create a legal existence for the waste picker group or to make the statement that waste picking is a serious business. There are however many obstructions that hinder the operations of a cooperative: authorities may not support waste picking, the industries unwillingness to accept materials without a middleman or junkshop, the low educational level of the waste pickers, lack of financial networks and low access to credit, lack of business experience (Medina, 1997).

### *Social-Political Context*

In many developing countries, governments often show reluctance to support waste pickers. A reason for this attitude towards waste pickers is the unmodern image of waste picking systems and individuals. This is however not always the case. Medina identifies four different approaches from authorities in developing countries towards waste pickers:

1. **Repression:** waste picking is perceived as inhuman, a symbol of underdevelopment, something where other people feel ashamed for. In many cities in developing countries, informal waste recovery is illegal and the offender is punished. This is considered to be the most prevalent form of attitude towards waste pickers
2. **Neglect:** In other cases waste pickers and their activities are ignored by the authorities. There is no question of harassment or support by the government.
3. **Collusion:** Sometimes the relationship between the waste pickers and the government can have the tendency towards a complex shady structure, where waste picker and authority support each others (sometimes illegal) actions. An example is the payment of bribes by local powerful waste pickers to Mexican authorities in Mexico City to ignore their business. Another illustration is the fact that collection routes by municipal services through wealthy neighborhoods are sometimes sold or traded, which is also illegal.
4. **Stimulation:** The economic, social and environmental benefits of waste picking are gaining more attention, not only in international literature concerned with the urban development issues, but also from the national governments in developing countries. A reason for this shift is the failure of the implementation of Western models of solid waste management in several of those countries.  
(Medina, 1997)

#### *Hypothetical model of waste picking systems*

Nas and Jaffe integrated these aspects into a table where they identify four hypothetical cases. The previously discussed aspects are combined to construct a new variable, the success factor. The success factor signifies the chance of the waste picking system to function adequately, which is interpreted here as a higher likelihood of integration into the formal waste management system. Although the data represented in the table is grounded on various cases around the world, it can not be used as a complete model for waste picking systems.

Table 1.1 Interaction of characteristics of waste picking systems

	Level of organization			Socio-Political Context				Socio-Cultural differentiation		Advanced technology		Success factor
	Low	Med	High	1	2	3	4	Ethnic	Status	Appropriate	Inappropriate	
A			X				X		X		X	++
B			X			X		X	X		X	+
C		X			X				X	X		-
D	X			X				X	X	X		--

Social-Political context: 1: Repression, 2: Neglect, 3: Collusion, 4: Stimulation

Source: Nas and Jaffe, 2000

The level of organization is low, medium or high, the socio-political context exists out of repression, neglect, collusion or stimulation. The socio-cultural differentiation (between the waste picker group and the public) is divided in ethnic and social status groups. The last factor, which is not discussed so far, is the use of modern technology in the solid waste management system, and whether this is appropriate or not. A factor of importance for the level of success which is not mentioned in the table is the type of intervention, from either the government, or NGO/CBO. The adaptation of this factor in the table would lead to some difficulties, because the type intervention varies per local situation. In some situations,

government intervention may have a better chance to change the system while in other cases NGO intervention may be more desirable.

From the table the following remarks can be made: cases with a high level of organization or local circumstances which are supporting the setting up of such organizations, in the table case A and case B, have a higher chance to be integrated into the formal solid waste management systems. The prospects of integration are even better when the government shows an attitude of stimulation towards the waste pickers. The use of modern technology in collection, transport, disposal of waste is not appropriate in those cases, because it is assumed that the informal systems of waste recovery works best where modern equipment is not used.

A policy of repression or an approach of neglect usually results in a negative influence on the waste picking systems, with limited opportunities to improve working conditions. According to Nas and Jaffe, the socio-cultural differentiation within a certain region does not directly affect the potential success of the waste picking systems:

“Levels of organization are sometimes but not always higher amongst a distinct ethnic group, but governments may be more likely to adopt a stimulation policy if those involved in informal recycling activities are of the dominant ethnic group (Nas and Jaffe, 2000, p. 350)”.

### ***The junkshop – the boundary between the formal and informal sector***

The junkshop is an establishment, usually small- or middle sized, which buys and sells waste. Waste materials are stored and once a certain volume is reached, the materials are sold to other waste buyers, such as other larger junkshops, wholesalers, and recycling industries. Because of the large volume of the materials, costs of transportation are kept low. Furthermore, value added activities are performed by junkshops to get a higher price, such as cutting, shredding, cleaning, sorting, packing or compressing of waste materials, also because the international industries usually practice certain material requirements within trade contracts (Scheinberg, 2001). For instance, metal rods are to be cut up to 1 meter each, and some plastic recycling industries demand the plastics to be sorted according to type and color of plastic and shredded in small cullets.

A junkshop can buy many different types of materials, but some are specialized into one certain type. The following materials are generally bought and sold by junkshops: any type of metals (iron, brass, steel, copper, bronze, zinc, etc), glass and bottles, paper, rubber, cardboard and plastics.

The materials are usually weighed before transaction if it applies to a material which is bought and sold per kilogram, piece materials such as bottles or batteries as sold and bought per piece. Because the value of waste materials is influenced directly and indirectly by the regional and world economy, prices have the tendency to fluctuate heavily.

As the junkshop forms a intermediary between the informal waste recovery and the formal recycling industries and wholesalers, the junkshop can be referred to as the ‘grey zone’, being partially formal and informal (Klundert and Lardinois, 1995).

Besides being an economic center of waste recovery, the junkshop also sometimes functions as a social hub for people involved in waste recovery. In some cases, junkshops provide workers with food, shelter or education.

### ***Hierarchal systems in the private waste recovery sector***

Work relations in the waste recovery sector (waste pickers, small en large junkshops, recycling factories) can be characterized as patron-client relations. Based mainly on mutual trust, this hierarchal system is fairly stable, as materials deliveries are more or less constant over time. Also, money lending patterns exist, where relatively powerful actors in waste recovery provide lower status actors with credit, which forces the ‘lower’ trading partner into a particular trading relation. For example, recycling factories can bind large or small junkshops

with an advanced loan. Small and large junkshops in their turn use the same pattern to set up a stable trading relation with small middlemen or waste pickers (Nas and Jaffe, 2000). As mentioned, waste pickers are often highly dependant on the middlemen providing them income. But the middlemen can provide waste pickers a certain security of living by providing food, shelter, or income. This dependency from waste pickers towards middlemen has led to fixation of the prices at a very low level by the middlemen. The relations between junkshops can sometimes also be described as hierarchal. Large junkshops provide advanced loans to small junkshops who have limited access to capital (Scheinberg, 2001).

### **1.3 Research problem, research question, research objectives**

The literature discussed above stresses the need to perform more research on social economic waste recovery systems in developing countries. Most of the cases in the international debate are based in metropolitan areas. Waste related issues are believed to play a larger role in these areas (which they probably are in most cases). Waste economies are also more present in large cities, often including large scale recycling enterprises that need large volumes and a stable supply of materials in order to function properly. However, research on the functioning of social economic waste systems in middle-sized cities is also needed to create more understanding on the characteristics of these waste recovery systems, such as interactions between actors involved in solid waste recovery.

One other reason to perform this research is based on the shift in the recognition of the value of waste materials, as well as benefits for the environment resulting from waste recovery activities. As discussed earlier, markets for waste materials exist all over the world, and the idea that waste can be turned into money is accepted more and more by the general public. A better understanding on the functioning of these systems could lead to better implemented and integrated policies regarding solid waste management issues in developing countries.

The research problem is identified as: solid waste management systems in developing countries struggle with many issues. The idea of using strengths of the private sector to handle solid waste issues is supported.

Keeping these concepts in mind, the following research objectives are constructed:

- To identify the different actors in solid waste recovery in Bacolod City, The Philippines
- To map the system constructed by the various private waste recovery actors
- To examine the position of the local (city) government within this system

The objectives lead to the following research question:

#### ***To what extent is a private solid waste recovery sector system active in Bacolod City, the Philippines?***

Although this main question is broadly formulated, it gives full opportunity to comprehend an entire sector or system in its widest form. To study a system or structure means to study several actors and how these actors are interacting with each other. Hence, the question is stated as above.

However, one complete answer to this question is unreachable, as many different issues are addressed. Therefore, subquestions are constructed to make the research more concrete. The subquestions are defined below subsequently.

- *Which actors are involved in the private waste recovery sector?*
- *How are these actors characterized?*

- *How are these actors interacting with each other? What are the characteristics of 'the system' of the private sector, i.e. how does the system operate? What relationships exist between different actors?*
- *Are any policies (national or local) affecting the operations private waste recovery sector? If so, which policies, and to what extent are the different actors affected? What is the position of the municipal government of a middle-sized city in this system?*
- *To what extent is intersectoral cooperation practiced (between municipal government, private sector, CBOs/ NGOs) in solid waste recovery activities?*
- *What are major strengths, weaknesses, opportunities and threats for the different private waste recovery actors in Bacolod City?*

### **1.4 Terminology**

A set of clear working definitions are necessary in order to perform the research properly. A remark is that the terms below are defined towards the operation of research. However, it does not claim that consensus exists about these definitions.

Actors:

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**Itinerant collector:** An individual who goes door-to-door to collect, buy or barter any discarded materials with a certain value.

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**Junkshop:** Commercial establishment that buys and sells waste materials. In some cases, processing techniques are executed to increase the value of the materials.

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**Middleman:** Dealer in waste materials, standing between waste pickers on the dump site and the junkshops. Middlemen usually do not operate from a permanent location.

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**Port outlet:** An establishment located at the port that stores relative large quantities of materials, e.g. scrap iron. Materials are shipped when a certain volume is reached.

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**Recycling Industries:** Businesses that use recovered solid waste materials as a resource to fabricate new products

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**Runner:** Local term for Itinerant collector

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**Street picker:** An individual who roams around to retrieve waste from the streets with the intention of selling or trading it

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**Waste picker:** as discussed, this term is debatable, but in this thesis a waste picker is defined as a person who extracts waste materials from the city dumpsite, and this person recognizes waste at some point as a valuable material.

Sectors:

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**Formal sector:** Economic activities that are registered officially, and which can be regulated by formalized institutions.

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**Informal Sector:** Economic activities that take place beyond official record, not subject to formalized systems of regulation (Knox and Marsten, 2000)

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**Private Sector:** Entities and establishments outside the governmental structure. In this thesis, the focus is put on establishments with the objective to create income or profit, whether active in the informal or formal sector.

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Concepts:

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**Integrated and Sustainable Waste Management:** A development based concept in which several actors are joined together in one system, using the strengths from each individual actor to maximize efficiency and objectives, of the actors individually but also to reach a common goal

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**Resource recognition:** being aware of the value of a certain resource

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**Solid Waste Management:** an environmentally based concept which aims to manage all solid waste produced by a population, by performing activities such as waste collection, transportation, final disposal, waste recovery, urban cleansing and recycling (Aroyo Moreno *et al*, 1997).

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Activities:

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**Waste recovery:** the removal or rescue of post-consumer materials for some type of reuse or recycling. Activities include: separation, sorting and eventual processing of waste materials to be used in production (Aroyo Moreno *et al*, 1997).

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**Waste Picking:** the activity of recovering waste materials from any location after disposal, with the objective of re-use, recycling, or for trading and selling.

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Technical terms:

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**Solid Waste:** All non-liquid, non-gaseous materials that are discarded by households, commercial establishments and institutions. The materials are not intended to be reused or recycled by the producer. Not included are hospital waste, agricultural waste and hazardous industrial waste.

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### **1.5 Methodology**

The research started in December 2003 with a reconnaissance on the academic literature on solid waste issues in third world cities, as well on the study performed by Martijn Schutte on solid waste management in Bacolod City, The Philippines. These pieces of information led to the formation of the initial research question. At that time the following was clear from the thesis of Schutte: the Department of Public Services is responsible for urban waste collection in Bacolod, around hundred waste pickers were active on the city dumpsite in 1997/1998, some people were active in buying materials from households, and there are some junkshops in the center of Bacolod. The initial research questions focused primarily on the economic sustainability of the waste sector in Bacolod: the possible opportunities to generate income from waste materials for small-scale urban entrepreneurs in Bacolod.

The research instruments to be used were unknown during that time, as it was assumed that the instruments could be selected in Bacolod after identifying the main actors involved in waste recovery.

The fieldwork took place from March until august 2004. After arrival in Bacolod it appeared that some changes were made since the time of study of Schutte in 1998 that would affect waste recovery related operations. First, a new national solid waste policy had been adopted on local level by the city government, and three barangays had been selected to form a

showcase project for the rest of the city. The implementation of the new policy in the three barangays would seem interesting to study issues and opportunities.

And second, the local community outreach organization *Balayan*, whose members helped performing the research, had put proper solid waste management on its main agenda. The knowledge of local solid waste management and informal systems was important to identify the main actors. These are the following: junkshops, waste pickers and itinerant collectors although indirectly, the city government also plays a role worth studying.

After identification of the actors the so called exposure commenced, visits to junkshops, the city dumpsite, city hall planning office and a community solid waste project site of *Balayan* were planned. The familiarization with these people and the places involved in solid waste recovery would lead to new questions, research instruments, and a time frame. The help of a translator who has been involved in solid waste management issues was used to communicate in the local language.

The following steps have been made: first, a data table was set up with names and addresses of as many junkshops as possible. The junkshop was chosen as the first research object for multiple reasons: the junkshops would provide information about the informal waste sector in Bacolod, such as the waste pickers and itinerant waste buyers, as junkshops form a nexus for all solid waste recovery related activities in the area. Another factor for choosing the junkshops as the first point of interest was formed by the fact that the national and municipal elections were to be held within one month. This meant that municipal officials were completely occupied with the upcoming event, and appointments were moved to post-election time.

The city hall planning office provided a list with a few large scale junkshops in Bacolod, another list was provided by a report constructed by the La Salle University in Bacolod. Also the representative of the Junkshop association in the Bacolod City Solid Waste Management Board (BCSWMB) was approached to help out with the identification of the junkshop members of that association. After combining both lists and the information provided by the representative, initial interviews with the junkshops were conducted, and the list was adapted after inquiring the junkshop owners. The junkshop questionnaire changed after the first two interviews to smoothen the conversation.

The junkshops to be interviewed were selected in different parts of the city, also in varying scale of operation, so that the results would be representable for the entire city of Bacolod.

In the mean time, the Bacolod city dumpsite was visited. It appeared that about two hundred waste pickers were active at the dumpsite. Information about the operations of the waste pickers in Bacolod would be essential for the basis of the research, as the livelihood of these people is based to a great extent on the recovery of solid waste. The waste pickers organized themselves into an association. The chairwoman of the Bacolod City Wide Scavengers Association (BSWSA), also an active waste picker, was approached with the question whether interviews could be conducted with the members. The chairwoman agreed and informed the members about the possibility of being interviewed. She also provided a handwritten list with all the members, so that the respondents could be selected at random. The waste pickers were grouped according to their households to prevent a second interview with a person from the same household. From 93 households in total 30 were selected at random to be interviewed. One person per household would be interviewed. However, at the dumpsite it appeared that it was difficult to locate all respondents; some were not present at that time due to illness or other occupations elsewhere. The decision was made to interview as many respondents from the list as possible, but if none of them were present other waste pickers would be interviewed instead. The reason for this is the unhealthy situation at the dumpsite, and time spent at the site by a western researcher should be limited.

The majority of the dump trucks are returning from their first shift approximately between eleven in the morning and two in the afternoon. Therefore the interviews were planned before eleven in the morning and after two o'clock in the afternoon. When more trucks were

dumping at the same time, lesser waste pickers were available to interview. One questionnaire usually took around 15 minutes, with around 10 interviews a day. The interviews were conducted at the dumpsite, under a shelter made from old sheets, bamboo poles and plastics (see photo 1.1).

Photo 1.1 Performing questionnaires on the city dump site



The questionnaires were being conducted on the dump site, under a construction of wooden and bamboo poles, plastics and discarded sheets. The man in the checkered blouse is the translator.

In the mean time some information was gathered about the operations of the middlemen. As mentioned, these people play an important role in the waste transportation from dumpsite to the junkshops and are the main suppliers of income for the waste pickers. After finalizing the questionnaires with the waste pickers, some of the middlemen were interviewed as well. In total, 3 of the 5 middlemen or middlemen couples were approached and interviewed.

The data regarding the operations of the itinerant waste buyers was a little harder to attain. The locally called *runners* go around the city and return to a junkshop when enough materials are collected or at the end of a working day. The plan to approach these people was to stakeout at multiple junkshop reception points, where the delivered materials are taken in and weighed. Here, the runners were asked if they were willing to be interviewed about their operations. About half of the runners were willing to participate, others rejected the offer and continued with their operations. One interview took around 15 minutes. Various junkshop locations in Bacolod were used to wait for runners to arrive.

Simultaneously, appointments were made with barangay officials involved in the pilot solid waste management projects. The following barangays were visited: Estefania, Vista Alegre, Handumanan and barangay Taculing. Taculing is different from the other barangays in the sense that it is not a pilot project for the solid waste management policy, gaining lesser attention and financial support from the city government. The project management does strive to pursue the rules set by the new policy as much as possible.

A list of questions was tested in barangay 7 where a similar project was set up by the community outreach organization *Balayan*. However, after visiting the first out of three pilot barangay Estefania, it appeared that each barangay was free to fill in its own project space, and some of the questions were inappropriate. Nevertheless, the list was still used as a framework for the interview, as it could still be used to guide the conversations into a particular way. Also, comparison between the barangay project implementation and general issues could still be made.

From the interviewing of the junkshops and from the representative from the junkshop association the following was clear: two junkshop associations exist in Bacolod. One is the Bacolod Junkers Multi Purpose Cooperative, the other Negros Junkers Marketing. Either chairmen or leaders were interviewed about the objectives, operations and issues concerning the Junkshop groups.

The chairwoman of the Bacolod City Wide Scavengers Association was interviewed to create more understanding in the activities of the group. A cooperative within the association was set up as well to generate more income for the waste pickers, but the cooperative was not functional at that time.

The writing of the thesis took place in the Netherlands in the period September 2004 – June 2005.

### **1.6 Research structure**

The following topics will be handled: Chapter two provides a geographical background in which the research took place; the Philippines will be briefly touched, several aspects of the island of Negros are addressed, and the major characteristics of Bacolod City will be discussed.

Next, chapter three provides background information on solid waste management in Bacolod City; previous research performed in Bacolod on solid waste management is reflected, changes in solid waste management policy on national and municipal level are described along with data on waste composition.

Then, chapter four deals with the core part of this research, providing a full description on several actors of the private waste recovery sector, and relations between those actors.

Chapter five examines the implementation of solid waste management in five projects around Bacolod and the way these projects might affect private recovery activities.

Finally, chapter six summarizes and analyzes the findings made in the previous chapters. Recommendations for future studies are also provided.

## Chapter 2: Geographical Background

First, the main geographical features such as setting and climate will be provided, along with a brief history of the Philippines. Economic and political features of the Philippines are discussed. Then, the chapter will zoom in on the island of Negros. Land use and economic characteristics will be discussed. Next, basic information will be given about Bacolod City, the urban landscape in which the research took place.

Figure 2.1 Map of the Philippines



Source: Map retrieved from website Western Washington University, 2005

## **2.1 The Philippines**

### *Basic geography*

The archipelago of the Philippines consisting out of over 7100 islands is situated in Southeast Asia, surrounded by the South China Sea on its western frontier, the Philippine Sea on its eastern borders and the Sulu Sea, the Mindanao Sea and the Celebes Sea on its southern outskirts. The countries located around the Philippines are Taiwan in the north, China and Vietnam to the west, and Malaysia and Indonesia to the south. The amount of islands seems debatable to some of its inhabitants; when asked how many islands the country counts, many respond jokingly that it depends whether it is high or low tide. The groups of islands of the Philippines can be roughly divided into three regions: Luzon, the largest island in the north, where capitol Manila is situated, Mindanao, the second largest island, in the south and the Visayas in between, consisting out of a large amount of relatively smaller islands.

The landscape consists mostly out of mountainous areas, some of which also contain active volcanoes. Deforestation has led to an immense decrease in forested area; in the beginning of the 20<sup>th</sup> century two-thirds of the Philippine landscape was covered with dense forests, while at the moment this number is estimated on 18 percent (Rowthorn *et al*, 2003).

### *Climate*

The Philippine climate is characterized by two seasons; a dry and a wet period. Generally, the wet season visits the island groups from June to September and the dry season ranges from September to May. However, weather patterns are argued to have become less predictable over the years, caused by international disturbances such as El Niño and La Niña. Also, the outcome of the different season varies per region. Typhoons, mostly occurring during raining seasons, strike mainly in western Luzon and the Visayas. The intensity of rainfall differs per region consequently (Rowthorn *et al*, 2003).

### *People*

The majority of the people of the contemporary Philippines have a history of movement running through their veins. First, Malaysians as Indonesians have crossed waters to set foot on the current Philippine soil, later on to be followed by a diasporas of migrants from China, Vietnam, Taiwan, Japan, Korea, the United States of America, India and Europe. These flows of people towards the Philippines are counterbalanced by an immense migration of current Filipinos to all corners of the world.

At the time of writing, the population of the Philippines is estimated on 87 million (CIA, 2005). In the year 2002, around 60% percent of the inhabitants were believed to live in urban areas (Asian Development Bank, 2003). Annual population growth appears to decline slowly: 2.3% in 1999, 2.1% in 2001 and 1.9% in 2003 (World Bank, 2005). Several languages are spoken in the country. While Tagalog is the official language of the Philippines, others such as Cebuano, Ilongo, Ilokano, Waray-waray and Bicolano are also widely used. These main tongues are further divided into many locally spoken dialects. The majority of the population, around 90%, adheres one of the many movements of the catholic religion. Five percent of the population is Muslim; other religions present in the country are Buddhists (3%) and indigenous beliefs.

### *History*

Besides a common history of migration, the Filipinos have endured many different rulers. The Spanish colonized the country in the 16<sup>th</sup> century, after a conflict with the Portuguese. The group of islands was renamed after the heir to the Spanish throne, Philip. The United States of America invaded the country after war was declared by Spain to the USA. An independent state was proclaimed on the 12<sup>th</sup> of June, 1898. From 1942 to 1945, Japanese forces occupied the country. After fierce battles, the USA prevailed and official control was given back to the Philippine government. In reality, the USA still had strong influences in the

country. Another period of oppression took shape during 'the Marcos era'. Ferdinand Marcos was elected for president in 1965, after which he imposed martial law on the entire country in 1972 to protect himself from losing control. In 1986 the people of the Philippines were fed up with the dictatorial regime and stormed the presidential palace. Marcos was exiled. The USA is still present in the Philippines after deploying soldiers in Mindanao to track Abu Sayaf Islamic militants.

### *Political system and decentralization*

The political system is based on the US-style constitution. A president is elected directly by the people. The Philippines count 78 provinces, which are grouped into 16 regions. Each province is headed by a governor. Provinces are composed out of municipalities, which are in turn subdivided in *barangays* (villages or communities), the smallest political unit.

Decentralization played and still plays an important role in the Philippine political system. Although some efforts towards decentralization were made before the years of the Marcos regime, serious and rapid moves were made after the dictator had been exiled. Under influence of several financial institutions, such as the Asian Development Bank and the World Bank, the Philippines started to decentralize several central government functions to local government units (LGUs). As mentioned, processes of decentralization were part of the Washington Consensus, the western development concept that embraces ideas of neo-liberalism. The United States of America also strongly supported this idea at that time.

The 1987 constitution provided partial autonomy for local governments, resulting in several planned steps to further enhance the process of decentralization. In 1991, the Local Government Code described several features to increase the autonomy of local areas. First, the responsibility of various services that were managed by the central government before shifted to local governments, such as health, social welfare, environmental management, agriculture, public infrastructural works and education. Second, enforcing instruments were given to the LGUs to give power to approve certain plans. Third, participation of civil society and Non-Governmental Organizations (NGOs) in local decision making was highly supported in the Code. Fourth, the LGUs were given the power to collect funding through taxes and gaining revenues from exploitation of natural resources. Fifth, instruments were constructed to support LGUs to cooperate with the private sector, in order to achieve higher levels of competition (MacAndrews *et al*, 1999). Of course, these changes would affect the national economy. Before proceeding to these developments, a brief description of the national economy will be provided.

### *Economy*

Looking at the division of the three economic sectors (agriculture, industry and services) in terms of percentage of Gross Domestic Product (GDP) over a period of twenty years, figures show that the share of agriculture is declining, industry is slightly decreased and that the share of services is growing fast. The annual GDP has grown over the past few years up to 4.5% in 2003 (World Bank, 2005).

While agriculture composes less and less of the GDP, a large share of the labor force is still involved in this sector. The main agricultural products grown in the Philippines are sugarcane, coconut and rice. The tourist sector is also of growing importance for the Philippine economy (Rowthorn *et al*, 2003). Regarding import and export, the United States of America and Japan fill in the first and second place on both sides of the scale, with China taking the third place (Asian Development Bank, 2004b).

Another well-known sector which carries a high value for the Philippine economy is formed by the overseas working employees, who send remittances to the home country of considerable amounts. In the period of 1995 until 1999, Filipino workers sent around 29

billion US dollars per year. The remittances compose 8 percent of the annual GDP (Asian Development Bank, 2004a).<sup>3</sup>

To position the Philippines in the Southeast Asian region, comparisons with surrounding countries show that, in terms of GDP per capita and GDP growth, the GNI income per capita stands between Indonesia and Malaysia on the upper side and Cambodia and Vietnam on the lower side. GDP growth is relatively less compared to the other countries. However, it must be acknowledged that these figures explain little about poverty or social welfare, nor about spatial or economic differences within a country.

Table 2.1 Positioning the Philippine economy in Southeast Asia

	<b>GDP</b> (in billion US dollar)	<b>GNI per capita</b> (in US dollar)	<b>GDP annual growth</b> (in percentage)
Philippines	80.6	1080	4.5 (2003)
Vietnam	39.2	480	7.2 (2003)
Malaysia	103.7	3880	5.3 (2003)
Indonesia	208.3	3880	5.3 (2003)
Cambodia	4.2	300	5.2 (2003)

Source: World Bank, 2005

Table 2.2 Share of Gross Domestic Product

<b>Output</b> <b>percentage of GDP</b>	<b>(in</b> <b>1986</b>	<b>1995</b>	<b>2003</b>
<b>Agriculture</b>	24.6	21.6	14.4
<b>Industry</b>	35.1	32.1	32.3
<b>Services</b>	40.4	46.3	53.2

Source: Asian Development Bank, 2004b

Although these figures might give a flourishing image of the Philippine economy, poverty is still widespread in the country. Internal differences are very present in the Philippines. Rural poverty is certainly an issue in the country, however, urban poverty is a phenomenon which should not be underestimated. In the year 2000, 47% of the rural and 20% of the urban population were believed to live below the national poverty line. Especially the percentage poor people living in the countryside belong to the highest in Southeast Asia (Asian Development Bank, 2004b).

#### *Structural Adjustment and informalization of economy*

The Structural Adjustment Programs that took place in the Philippines under the economic step of the decentralization process described above, led to major cuts in governmental employment overall. Services formerly executed by governmental institutions were contracted out to or taken over by the private sector in order to suppress state expenditures. The costs of living in urban areas grew accordingly. As a result, urban residents started to create jobs where possible to sustain their livelihoods. A job in the informal sector was often easier to find or create, needing little capital and know-how. The share of people employed in the informal sector grew subsequently.

However, the informal sector in urban areas already mushroomed few decades earlier during the massive rural-urban migration that took place in the Philippines from the 1960s onwards. Attracted by a promise of employment, many migrants found themselves in a hard position to find work. In order to survive, jobs were created where possible. Current figures about the informal sector concerning employment and generated income are often hard to estimate, as no official registrations are made.

<sup>3</sup> Only India received more (46 billion). Mexico takes the third place with 28 billion US dollar per year in the same period.

## 2.2 Negros

The island of Negros is situated in the region Western Visayas between the islands Cebu and Panay. The island is surrounded by the Guimaras Strait on the western side and the Tañon Strait on its eastern side. The population of the island grew rapidly after the second half of the 18<sup>th</sup> century when many immigrants from several nearby islands landed on Negros. The regional economy mushroomed shortly after when sugarcane became the most important crop. The raw material for sugar was grown widespread across the island. Modern equipment was introduced; first steam driven, later to be replaced with petrol based machinery. During the Second World War, Japanese forces occupied the island, although guerillas and resistance considered surrender as no option. After the capitulation of the Japanese army in 1945, the main pillar of the regional economy was reinforced again. New sugar mills were founded and until the 1980s, Negros delivered up to 60% of the nation's sugar output (Province of Negros Occidental, 2005).

Figure 2.2 Map of Negros and surrounding islands



Source: Map adapted from website Tschumpel, 2005

However, after the world sugar prices dropped tremendously, the regions economy suffered consequently. The people of Negros learned a valuable lesson from the sugarcane dilemma. Diversification programs were implemented all over the island to be less dependant on one

particular product. Investments were made in prawn farming and high yielding crops such as consumer fruits, vegetables and livestock. At the end of the 1980s, the economy appeared to have restored itself partially, only to be hit again by the international economic crisis which brought many national economies in Southeast Asia to a standstill (Province of Negros Occidental, 2005).

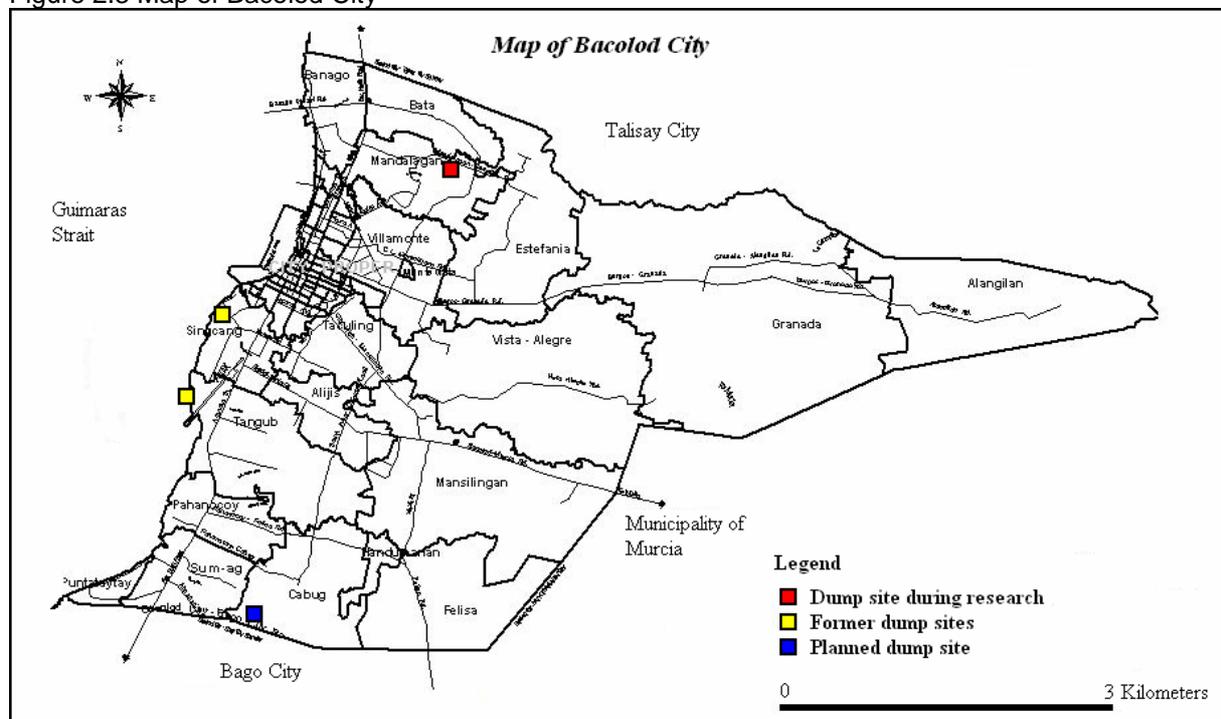
When drawn a line from north to south, Negros ranges around 370 kilometers. The island's geography is dominated by the volcanic mountain range, which stretches itself from north to south. Mount Kanlaon, an active volcano, overlooks the island in all directions with its roughly 2500 meters. Several rivers make sure the precipitation reaches the sea again. During the wet seasons, flooding occurs frequently along the river banks, sometimes damaging agricultural lands.

The island of Negros is divided in two provinces: Negros Occidental with capital Bacolod and Negros Oriental with capital Dumaguete. This political division also roughly separates two languages: Ilongo is spoken on the west side (Negros Occidental) while the majority of the people living on the eastern side of the island speak Cebuano.

### 2.3 Bacolod

The name Bacolod is derived from the word *bakolod*, which means 'stone hill' in Ilongo. The first settlement of the city was founded on the hilly area of present day Granada, which is located on the eastern outskirts of the current Bacolod. Later on the city center moved to the coast after Muslim raidings, where the present day center is still situated. After the 'sugar cane rush' in second half of the 19<sup>th</sup> century, the city expanded accordingly. Bacolod became the main hub for the supporting the sugarcane industry; banks and transportation establishments were founded to sustain the sugar sector. The major population growth took place in rural areas however (City government of Bacolod, 2005).

Figure 2.3 Map of Bacolod City



Source: Map adapted from City Planning and Development Office, 2004

Large scale expansion took place after the Second World War. In 1948, Bacolod City counted approximately 100.000 inhabitants. In 1970 this number had grown up to 180.000,

this figure was doubled in 1995. After the sugar crises, the workers who lost employment in the sugar plantations and industries massively migrated to the city. Other explanations for the rush to the city are the social unrest caused by New Peoples Army guerrillas, and the image of higher living standards in Bacolod (Reitsma, 2003).

At the time of writing, the amount of inhabitants is estimated on 480.000 (Schliebs, 2003).<sup>4</sup>

Internal differences in population growth exist within the city. Overall, the population living in urban barangays (as defined by the city government) appeared to have decreased around 9% in the period 1995-2000, while in the same period this number was counterbalanced by a 12 percent population growth in rural barangays, situated on the eastern outskirts of the city. A note here is that relocation programs took place in a few rural barangays<sup>5</sup>. Many squatter citizens from the inner city used this opportunity and moved to these sites. However, squatter areas are still present in the city of Bacolod.

Approximately 56% of the city is covered by agriculture land use. However, this number is constructed by a few relatively large rural barangays on the eastern side of the city. Around 80% of the agricultural land is used to grow sugarcane. Other major crops grown within the city's borders include rice, corn, flowers. Poultry raising composes another large part of the agricultural sector (Schliebs, 2003).

Bacolod city is divided into 61 barangays, out of which 41 are classified as urban (Barangay nr. 1 – 41), while the remaining 20 are identified as peri-urban or rural. In 2003, around 340.000 people were living in these peri-urban or rural barangays, by far the majority of the city population. Looking at figure 2.3, the 41 relatively small urban barangays are clustered on the western side of Bacolod, surrounded by semi-urban barangays on the eastern, northern and western sides. The barangays situated on the eastern outskirts such as Alangilan, Granada, Vista Alegre and Mansilingan are identified as rural area, as agricultural land uses are predominant.

Although of relatively less importance compared to the 1970s (before world sugar prices dropped), the current urban economy still thrives on the sugarcane production on the island. In 2003, the percentage of export sales composed by raw sugar was around 55%, far exceeding other products (City government of Bacolod, 2005).<sup>6</sup> As Bacolod became the provincial capitol of Negros Occidental, several other services established themselves in the city, such as manufacturing industries, financial institutions, agro-industry and distributors of products. As in any city in the Philippines, an informal economy is also present in Bacolod, although the extent of it is unknown. It is difficult to make statements about informal activities as no registrations are made. However, observations show that several activities can be identified as informal, such as market stands selling fruits, vegetables and toys and small household items. Services provided by Trici-cads (small bicycles with sidecar), used for public transportation over short distances, are also informal activities. Some activities of the waste recovery sector are of informal nature, chapter four will discuss this sector in detail.

Regarding the waste economy, some differences are present between a middle-sized city such as Bacolod and metropolitan areas.

First, large scale recycling factories are not located in Bacolod, because there are not enough crude materials to supply these factories. Large cities with more than one million inhabitants and metropolitan areas produce enough to make large scale recycling profitable. Cebu City and the metropolitan region of Manila are such large cities. The materials recovered in Bacolod have high probability to be shipped to either two of these cities.

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<sup>4</sup> This number is based on a projection made in 2003 by the Australian researcher Schliebs. Note that exact population amounts are unknown due to illegal housing.

<sup>5</sup> These are the Handumanan relocation project and the Fortune Town relocation project.

<sup>6</sup> Second most important are aqua/marine products (fish) with 11%

Second, the recovery sector operates on a much larger scale. Amounts of waste pickers are much higher in Manila compared to Bacolod City.

Considering the fast pace in which the city is growing and solid waste management, it is understandable that the municipal government is coping with some issues. The next chapter will deepen on these topics by glancing back at previous research performed by Schutte in 1997. Changes in solid waste management in Bacolod City implemented after 1997 will also be discussed.

## **Chapter 3: Solid waste management and waste behavior in Bacolod City; background information**

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*The purpose of this chapter is threefold. First, it provides a rear-view mirror on research performed earlier on solid waste management in Bacolod City. Major findings of the thesis constructed by Schutte will be reflected. Second, changes in the legal framework concerning solid waste management, on national and municipal level, are represented and discussed. Thirdly, information is given about the waste composition in Bacolod City.*

As mentioned, this thesis forms a sequel on the research performed in 1997-1998 by Martijn Schutte, a Dutch student at the State University of Groningen. His thesis focuses on several aspects of solid waste management in Bacolod City, such as the way in which the city government manages solid waste and the perception of waste related issues by urban residents (Schutte, 1998). A brief summary of the work performed by Schutte is necessary to create a general overview on how solid waste management is practiced in Bacolod.

Another point of focus are the changes made in the legal framework that will affect solid waste management. The concept of the new policy will be given and discussed.

In this research, the assumption is made that waste is considered as a resource by many people. Some background information on the composition of waste is needed to create more understanding in waste recovery activities.

### **3.1 Solid waste management and waste behavior in Bacolod City**

The research performed by Schutte in 1998 focuses on the way Bacolod City manages its waste collection, transportation and storage. Also, the perception of solid waste related issues by urban residents in three *puroks* or subdivisions has been studied and analyzed.

The collection of urban solid waste is the responsibility of the Department of Public Services (DPS). At that time, approximately 70 percent of the population was served with waste collection by the DPS, either by door-to-door collection by a garbage truck or by the collection of skip hoist containers. Collection takes place in all of the urban barangays, along side paved roads. Some areas are not connected to these roads and residents have to bring their waste to a skip hoist or a common bin where collection does take place. Rural residents are not served because of the remoteness of these areas and it is assumed that waste is being composted, buried, burned or used as fodder for pigs. For urban residents these options are much harder to attain and improper waste disposal is often the result.

Another issue is that the municipal workers find it hard to comply with the collection schedule. The collected waste is brought directly to the city dumpsite Magsungay at the end of the trip. Here, unorganized waste pickers collect materials which are valuable to them and try to sell their daily harvest to a middleman, who in turn trades it to a junkshop located in the city (Schutte, 1998).

Waste behavior on household level is studied in three *puroks*, a subdivision within a barangay. The two *puroks* Mahimulaton and Ylac share more or less the same characteristics, both urban squatter areas, located near the seashore. The other, Eroreco, can be described as a middle-income neighborhood, and is located at the eastern outskirts of the city.

Both squatter areas are troubled with similar issues: many people are not throwing their waste in common bins or skip hoist containers. The distance from the household to the disposal site is perceived as too far. Waste materials are dumped on the beach, in a small creek, in an abandoned fishpond and in some open places between the houses.

Eroreco has problems of less serious nature: stray dogs who try to find some food in the trash cans scatter the waste around the streets. Waste is collected door-to-door and this is happening more compared to the other two areas (Schutte, 1998).

Other aspects of waste behavior which Schutte studied were if households segregate waste, and if so, which type of materials and for what purpose. Subsequently, he investigated if the households were willing to segregate waste when more waste buyers would be present in the region or when the municipal government would collect waste according to different materials. These aspects are interesting for this research for four reasons. First, it demonstrates whether household segregation takes place or not. Household segregation is important in this sense because it reflects a certain attitude of 'resource recognition' by the household, thus a certain awareness of the value of waste. Second, it also shows which materials are praised highly by the households and which are not. Third, the extent of selling recyclables to itinerant waste buyers by households can be estimated. And fourth, more understanding is gained about the motive of households for segregation of waste materials<sup>7</sup>. From Schutte's data, it appeared that almost all the respondents separated biodegradables from other waste. Glass bottles take a second place in the segregation process, although by less households. The data also shows that paper, cardboard, plastics and metals are segregated by some. Motives for segregation differ according to materials: glass and metals are generally sold, while paper, cardboard and plastics are often re-used. The majority of the respondents are willing to segregate more if more buyers would be available but also if the municipality collects waste separately.

Overall, these findings show that segregation does take place in Bacolod City, and that several materials are sold to itinerant waste buyers. The selling of waste materials to itinerant waste buyers is practiced by approximately two-thirds of the respondents. The generation of extra income by waste segregation appears only to be the case for glass, tins and metals. Re-use of papers, cardboard and plastics is also widely practiced (Schutte, 1998).

Waste behavior of households is important in this research, as they are a major waste producer in the city. The next section discusses a new waste policy, which attempts to change this waste behavior considerably.

### **3.2 RA 9003; A new solid waste management policy on national level**

The research performed by Schutte in 1998 provides a general idea on how the City government of Bacolod manages its waste and on several aspects of waste segregation performed by households. However, a major change is made in the legislative framework. A new solid waste management act has been approved by the Philippine national government in 2000 and should have been implemented by the year 2002. The contents and objectives of this Republic Act will be discussed here. These objectives of the Republic Act are the following:

1. Ensure the protection of public health and environment;
2. Utilize environmentally-sound methods that maximize the utilization of valuable resources and encourage resources conservation and recovery;
3. Set guidelines and targets for solid waste avoidance and volume reduction through source reduction and waste minimization measures, including composing, recycling, re-use, recovery, green charcoal process, and others, before collection, treatment and disposal in appropriate and environmentally-sound solid waste management facilities in accordance with ecologically sustainable development principles;
4. Ensure the proper segregation, collection, transport, storage, treatment and disposal of solid waste through the formulation and adoption of the best environmental practices in ecological waste management excluding incineration;
5. Promote national research and development programs for improved solid waste management and resource conservation techniques, more effective institutional arrangement and indigenous and improved methods of waste reduction, collection, separation and recovery.
6. Encourage greater private sector participation in solid waste management;

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<sup>7</sup> A note here however is that individual actions of waste separation within a household are not measured.

7. Retain primary enforcement and responsibility of solid waste management with local government units while establishing a cooperative effort among the national government, other local government units, non-government organizations, and the private sector;
8. Encourage cooperation and self-regulation among waste generators through the application of market-based instruments;
9. Institutionalize public participation in the development and implementation of national and local integrated, comprehensive and ecological waste management programs; and
10. Strengthen the integration of ecological solid waste management and resource conservation and recovery topics into the academic curricular of formal and non-formal education in order to promote environmental awareness and action among the citizenry.

*Source: Republic Act 9003, also known as the 'Ecological Solid Waste Management Act of 2000', (2000) Congress of the Philippines*

The key objective is to 'ensure the protection of public health and environment', which is generally considered to be the responsibility of the government at any level. The other objectives are more based on how to comply with this fundamental principle.

A clear component is the target to reduce waste volume on every level, in production but also to promote minimizing efforts such as composting, re-use, recovery and recycling. Another spearhead is to establish a close interaction between governments at all levels, the private sector, NGOs concerned with solid waste issues and the public. The objectives also stress the importance to create a market based approach regarding solid waste management; to maximize the utilization of valuable resources, and to encourage greater private sector participation. Overall, this Republic Act shows a tendency to more promote intersectoral cooperation between the solid waste actors, empowerment to local government units and to create opportunities for the private sector where possible. Waste materials are considered as a resource: the term 'resource recognition' seems applicable in this Act. As described in the first chapter, the literature concerned with solid waste issues encourages this shift from a firm government involvement in solid waste management to a more flexible, market based approach, where different parties interact closely together to achieve multiple goals simultaneously. A partial shift of responsibility to local government units is also stimulated in the Act. Clearly, concepts of decentralization are interwoven in the policy.

However, the Republic Act does not specifically recognize activities of an informal waste recovery system. The term 'private sector' can be interpreted very differently by various groups. Are waste pickers or itinerant collectors part of this private sector described in the Act? The term 'private sector' is not included in the list of definitions.

One point where the Republic Act could refer to the informal sector is item 5: "To promote national research and development programs for... indigenous and improved methods of waste reduction, collection, separation and recovery'. But again it remains uncertain what is meant with 'indigenous methods of waste reduction, collection, separation and recovery'.

### **3.3 Solid waste policy on city level**

The objectives of the national policy are incorporated in the municipality's legal framework. The city government of Bacolod constructed City Ordinance No. 310 in order to provide a legal basis for the implementation of the Republic Act 9003. The most important elements in this ordinance are:

- The establishment of a City Solid Waste Management Board (CSWMB).
- The formulation and implementation of a City Solid Waste Management plan by the CSWMB.
- The creation of Barangay Solid Waste Management Committees, committed to the formulation of a SWM program consistent with the City SWM plan.
- Waste segregation at the source; waste should be segregated into three different categories: biodegradables, recyclable materials and the residual waste, which is not suitable for

composting or recycling processing. The barangay is responsible for the collection and segregation of the bio-degradables and the recyclables, while the City government is in charge of the collection and disposal of the residual waste materials.

- Educate the public about solid waste issues, through a serious education campaign, set up by the CSWMB as well as the Barangay SWM Committees (Bacolod City Government, 2002)

As mentioned, part of responsibility will be shifted to LGUs. The city ordinance affirms this once more. Regarding waste management, processes of decentralization are also taking place in Bacolod.

The City Government of Bacolod selected three barangays for a pilot-project. The objective of these projects were to serve as a “best practice” showcase for proper solid waste management, through technical assistance as well as a information and education campaign. Also, the projects could identify major pitfalls encountered during implementation. The projects started in January 2003 and are still operational at the time of writing. To gain a better view on the implementation of RA 9003 on barangay level, the City government decided to choose three different barangays; one predominantly rural, one semi-rural/urban, and one mainly urban.

During the stay in Bacolod, these barangays were visited and the barangay officials were interviewed to generate an overall view on how the implementation of the Republic Act is working out for those areas. As this is part of the research, the data gathered at the barangays will be discussed in chapter 5; implementing RA 9003.

### **3.4 Waste composition in Bacolod City**

In the year 2000, the Canadian Non-Governmental Organization (NGO) ‘International Centre for Sustainable Cities’ (ICSC) has performed a study on the waste composition among waste producers in Bacolod, with the objectives to analyze the possibilities for waste recycling.

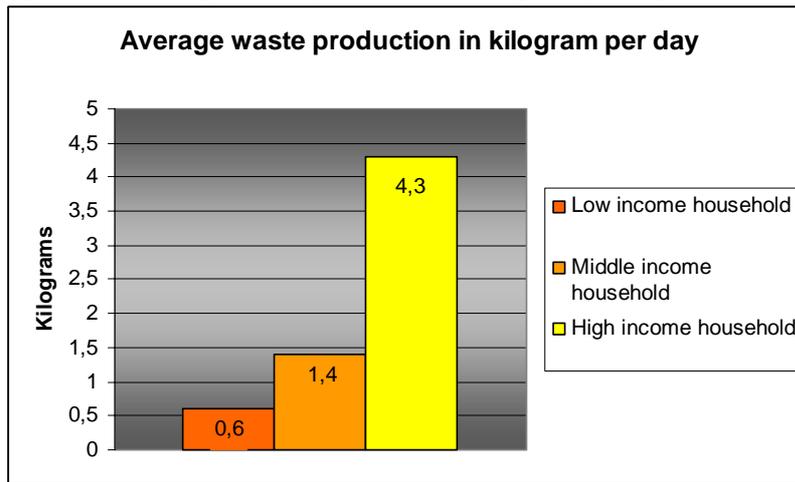
The NGO aims at urban sustainability, by dealing with issues of solid waste, water, sewage, transportation, housing and other relevant urban services.

In Bacolod, ICSC has been active in the Solid Waste Management Board, cooperating with the city government. Also, ICSC assisted with the foundation of a junkshop association, uniting several small-scale junkshops.

The waste compositions of three different waste producers have been observed and analyzed: the household, commercial establishments and institutions. The households are divided in three categories: low, middle, and high income. Institutions are predominantly schools.

Potential waste materials that can be recycled include paper, cardboard, hard plastics, metals and glass. Biodegradable waste includes kitchen and garden waste, and all other waste materials are considered as residual waste (Schliebs, 2003). According to the data, a great potential lies in the recycling of commercial establishments (see for detailed diagram appendix A). Waste composition may seem more or less the same among households, however, high income households produce a larger quantity of waste compared with the other categories low and middle income. The following figure illustrates this fact:

Figure 3.1 Average waste production in kilogram per day



Source: Schliebs, 2003

Figure 3.1 shows the correlation between household income and the average waste production per day. The data shows that high income households produce around 7 times as much as low income households, and approximately 3 times as much as middle income households. It is assumed that as household income increases and the standards of living increase simultaneously; consumption will go up as well, producing more waste (Schliebs, 2003).

A brief summary of the thesis written by Schutte provided a clear picture on how the municipality of Bacolod City manages solid waste issues. Other waste related problems in different residential areas are also discussed. Changes in the legislative framework are handled. Subsequently, a waste composition was represented. It is plausible that a correlation exists between the level of income and household waste production.

This background information is needed to make the step towards the next chapter in this thesis; the private sector.

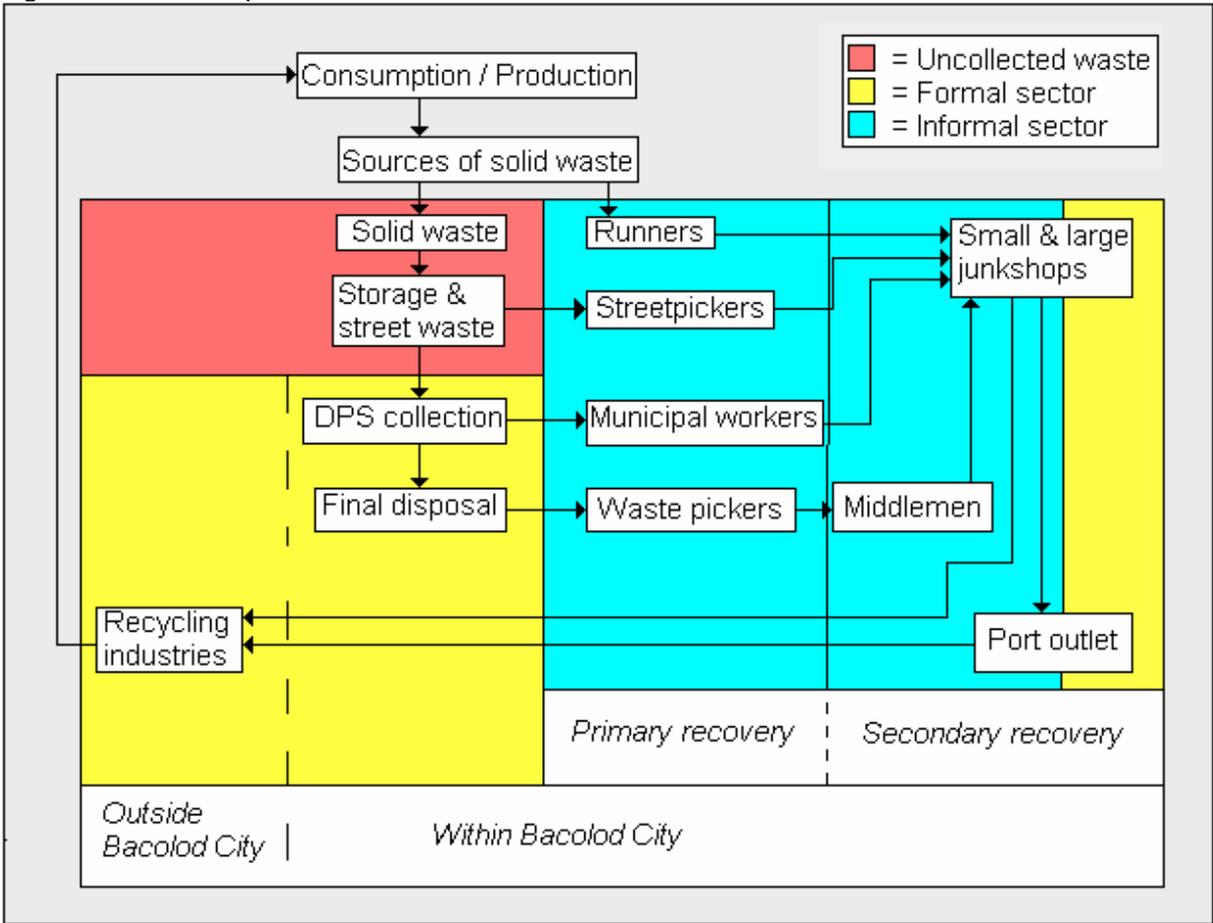
**Chapter 4: The private sector**

*This chapter provides an overview of the private sector active in solid waste recovery in Bacolod City. Characteristics of several distinctive groups are described, as well as relations between those groups.*

This chapter describes the characteristics of the private waste recovery sector active in Bacolod City. The term ‘private sector’ is used in its broadest sense; small-scale informal activities as well as large scale junkshops are included.

The sequence in which the different actors will be discussed is based on the different steps in the waste trajectory, represented in figure 4.1. Although the figure has been constructed after studying the structure of the private sector, it is here used as a road map through this chapter.

Figure 4.1 Structure private sector in the waste flow



Starting at the level of the waste generator, such as households and businesses, where the first intervention takes place; ‘runners’ and street pickers extract their part of waste materials. The waste is then collected by municipal workers who transport it directly to the city dump site. These municipal waste collectors usually also practice waste recovery activities during the job. Next, the activities of the waste pickers at the city dump site will be handled, the final stage in which waste is being retrieved from the flow. These activities are generally described in the literature as waste picking activities, however, because the term waste picker is used in this thesis to refer to the people active on the dump site, the recovery practices mentioned above will be categorized as ‘primary waste recovery activities’. The primary waste recovery

activities are identified here as the activities that take place after the waste has been discarded by the waste generators.<sup>8</sup>

Then, after providing a clear view on the 'primary waste recovery activities' in Bacolod City, the nature of the 'secondary waste recovery system' will be analyzed. The secondary waste recovery system is the network which is mainly based on the delivery of materials by the primary waste recovery. This sector usually stores and transports the waste materials when a certain volume is reached. In Bacolod, this sector shows its form in junkshops, middlemen, and port outlets. The involvement of the municipal government within the solid waste recovery sector will be discussed in the context of the recovery actor. The cities policy on waste management and its possible outcome for the recovery sector will be discussed in chapter five.

Subsequently, this chapter will try to reflect the social and economic relations between the different actors in the primary and secondary waste recovery sector.<sup>9</sup> The following relations will be discussed:

Waste picker – middleman;

Waste picker – municipal government;

Runners/ street picker – junkshop;

Junkshop – municipal government.

Next, when all the actors active in solid waste recovery are identified and analyzed a comparison will be made between the runners / street pickers and the waste pickers. To understand the differences within the primary recovery group, it is imperative that all other actors have been discussed.

Finally, the chapter will conclude with the major findings from the analysis.

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<sup>8</sup> Technically, households which sell waste materials to junkshops or runners are part of the primary waste recovery, however, this research does not focus on this group as they are a separate group and are not primarily involved in the waste recovery sector. Usually, income generated by waste does not constitute a large part of their livelihood compared to waste pickers, runners and street pickers. Another note is that the recovery of organic materials, either for composting or to use as fodder for pigs is not included in the research.

<sup>9</sup> Several actors have little to do with each other. For instance, waste pickers at the dump site have no or little contact with junkshops, as middlemen are the mediating factor. The middlemen play a major role for the waste pickers, however, the relation between the middlemen and the municipal government is not discussed here, nor the relationship with junkshops. These relations are assumed not to be important or are perceived by the researcher as straight-forward. The same is the case for the relation runner/ street picker – municipal government. A city official labeled these people as 'bums' during an interview.

## **4.1 Primary Waste Recovery**

The actors which have the first contact with waste materials after it has been discarded will be discussed in this paragraph. In Bacolod, these are the following: runners and street pickers, municipal waste collectors and waste pickers who are active at the city dump site.

### ***Runners and street pickers***

The first collection of valuable waste materials takes place at the doorstep of the waste generator. *Runners*, or locally called *pagalyi*, wander through the streets, on fixed routes or randomly, going door-to-door to inquire if waste generators are willing to sell, give or barter any materials which carry a certain value to the collector. Another practice which takes place at the level of the waste producer is street picking. After the waste is left at the streets waiting for municipal collection, street pickers go through the garbage cans or other waste receptacles to gather any materials which hold a value to them. Generally the runners and street pickers use a Trici cab, a small bicycle with a sidecar (see photo 4.1, page 46) to go around and to transport the materials. Pushcarts are also used by some, however, a Tricicad could have some advantages because of its larger action radius.

The actions described above can be described as an informal activity, which means that economic transactions and the business are not registered in the city hall.

The activities of runners and street pickers are not a new phenomenon in Bacolod. Before, runners were known as *Botteliers*, bottle collectors. But as the city of Bacolod grew and still keeps on growing, consumption grows absolutely but also relatively, and the volume generated waste goes up. New waste materials enter the waste flow, for example, in Bacolod, plastics are believed to have gain market value during the early nineties of the previous century. Data on the activities of these people in Bacolod hardly exists. There are no estimations about the amount of people active in this profession at the time of writing.

The following data is based on a questionnaire with 20 runners and/or street pickers. The interviews are held near different junkshops scattered through the city so that data would be more representable and therefore more reliable. The reason to handle both the runners and street pickers simultaneously is the fact that persons active as runner, frequently also pick waste on the streets. A clear boundary between both activities is hard to determine. Note that the interviews are held with individuals and that no household information is gathered.

### ***Demographic data***

All the respondents are male. From observations it appeared that some women are active in this sector, but the amounts are believed to be very low in Bacolod. The age of the respondents varies between 16 and 80 years old, but observations show that younger children also participate in these activities (see photo 4.2), sometimes under guidance of adults, but individual actions of street picking by children also occur. Figure 4.2 shows the age of the respondents:

Figure 4.2 Age runners and street pickers



Source: Questionnaires runners / street pickers

Although it is difficult to distinguish the runners and street pickers from each other, four respondents under age 18 retrieved their materials predominantly from the streets and trash cans. Another note is that two respondents were aged 73 and 80 respectively, relatively old considering the physical endurance a runner or street picker must go through every day. Both have been working as a runner for more than 40 years.

#### *Economic aspects*

Various motives are given for becoming a runner or street picker; a higher income can be achieved compared to other jobs, such as fishing, farming, or a sales boy in a department store. Others reply by answering that they have no other option to get a job. Some like to work individually, without a supervisor.

Many runners and street pickers generate alternative incomes through other jobs. Out of twenty (20) respondents, fourteen (14) have alternative income generating activities. Nine (9) of these persons use their Trici-cad for those other activities, as a Trici-cad driver who transports people over short distances in the city (7), sells ice cream (1) or soft drinks (1). See also box 4.1.

#### Box 4.1

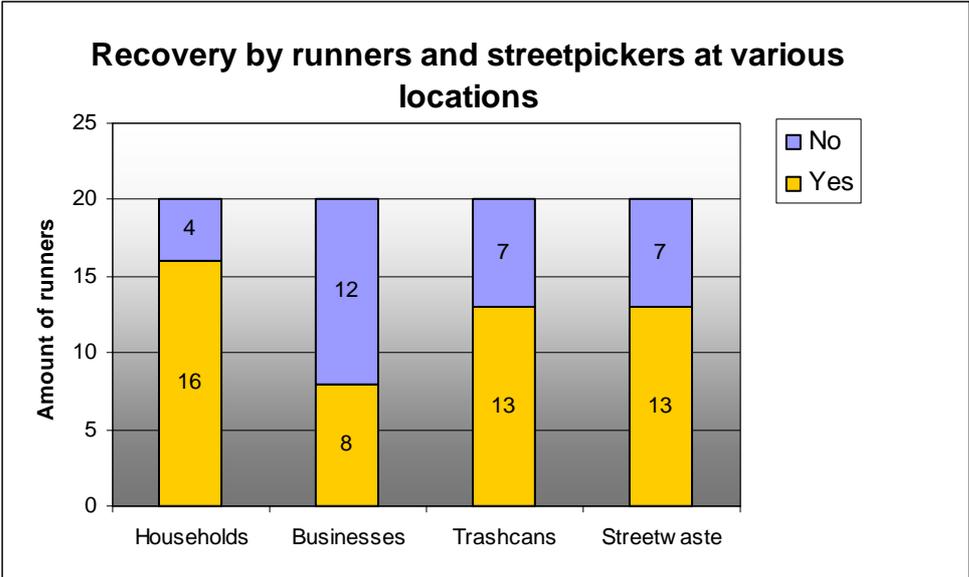
Runner Rene (38) owns a Trici-cad. Originally from Cadiz, a small city nearby Bacolod, he started recovering waste materials at age 18. In the morning, he uses his Trici-cad to deliver soft-drinks, and in the afternoon he continues his working day with material collection, going door-to-door, also buying materials from households. He also delves the trashcans and searches the streets for valuables. He claims that income has gone down compared to one year ago, and during the rainy seasons the income is even less because it is much harder to go around in the city and find proper materials. He delivers the materials to only one junkshop, one of the largest on Bacolod because they provide him with the best prices. Renee only visits one semi-rural barangay, as competition in other parts of the city is fierce. When asked if he has any plans for the future, he answers that he will continue with the jobs he has now until other opportunities arise.

Names are fictive

All the runners and street pickers use some sort of transportation equipment. Many of the runners and street pickers have a Trici-cad to their disposal, only a few use pushcarts. Eight (8) own a Trici-cad or pushcart while others (12) borrow it from a particular junkshop. One of the largest junkshop (described in box 4.6) provides a Trici-cad or pushcart to many of the twelve runners and streetpickers.

Figure 4.3 shows where the runners and street pickers recover the materials, and which locations are preferred.

Figure 4.3 Recovery by runners and street pickers at various locations



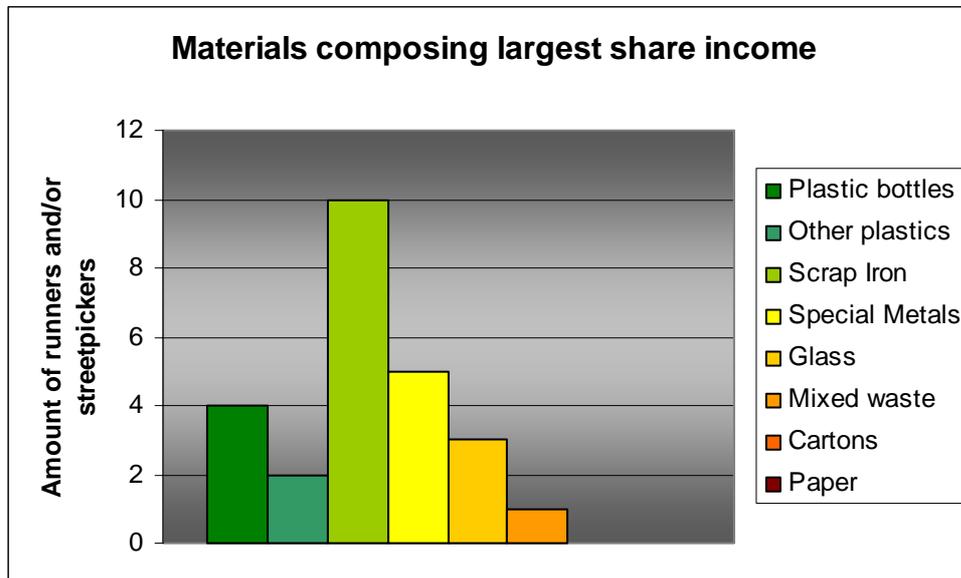
Source: Questionnaires runners and street pickers

Out of a total number of twenty (20) runners, sixteen (16) get their materials from households. Households are the main suppliers of materials to these people, followed by waste removed from trashcans (13) and scattered waste lying in the streets (13). The data also shows that the collection of materials from businesses happens the least frequent, with 8 runners collecting materials at those locations.

### Income

The average income per day is P 155, with minimum of P 50, and a maximum value of P 300. Figure 4.4 represents the materials which contribute to the largest share of the income.

Figure 4.4 Materials composing largest share income



Source: Questionnaires runners and street pickers

Looking at the type of waste materials, the data reveals that scrap iron and special metals (aluminum, bronze, copper, zinc, etc) contribute to the largest part of the total income generated by street picking and door-to-door collection. Plastics bottles and glass follow on a third and fourth place. Special metals usually carry a higher value per kilogram compared to plastics, paper and glass. This could be a explanation for the relative high percentage of runners claiming the importance of special metals and scrap iron for their total income.

According to a few respondents, competition among the runners and street pickers is fierce. Another social-economic change is the awareness of the value of waste materials by the urban residents, and higher prices are demanded, which can result in drop in income of the runners and street pickers. When asked whether income has either decreased or has increased compared to one or two years ago, twelve (12) respondents answer that their income has fallen, three (3) mention that income is more or less on the same level, and three (3) answer that income has gone up. Two (2) started with waste recovering less then a year ago and were not able to answer the question.

Incomes are believed to be lower during the rainy seasons. Many respondents claimed that during the rainy season it's much harder to work and income is therefore lower compared to other seasons. The ownership of a Trici-cad does not appear to have an effect on the level of income.

### Social cultural elements

The degree educational level of runners and waste pickers can be described as following: ten (10) respondents had education in the form of Elementary school, eight (8) went to High school, of which two (2) advanced to College level. Two (2) elderly runners didn't attain any form of education. See also box 4.2.

#### Box. 4.2

With his sixteen years, Nunoy is relative young to be working a street picker. He started less than a year ago, when he couldn't find another job. Nunoy graduated from Elementary school but did not proceed to High School. Besides working as a street picker, he is also a Trici-cad driver, transporting people over short distances. The entire city is his working ground, and he goes around randomly. He and a crew of other boys work for junkshop Luna, which provides him with a Trici-cad. Because of this certainty, he wouldn't change delivering to Luna when he would get a higher price elsewhere. Just like the other boys, he dreams of buying a motorcycle.

Names are fictive

According to the international literature, runners and street pickers are believed to carry a negative image, because the activities are associated with waste or with criminal activities. This perception also lives in Bacolod, at least partially. When asked to the respondents: 'what are the major issues encountered during performing the task of retrieving materials?', four (4) answer that they are often accused of robbery. Other answers (2) imply that the owners of the trashcans do not support the recollection activities, because scattered wastes on the streets are the result of delving the trashcans, and residents get upset. Most of the runners and street pickers come from Bacolod City originally (14), others come from other areas on the island of Negros, in the vicinity of Bacolod. Estimations about rural-urban migration cannot be made, because it's hard to determine whether areas are rural or urban according to geographical names, and developments of urban areas over time. From the gathered data, no ethnic minorities are known to be active in the primary waste recovery sector.

#### *Geographic elements*

To test the geographic variance of the activities, questions were asked about which areas or neighborhoods in Bacolod City the runner or street pickers would usually attend. The answers vary extremely; some prefer the relative wealthy *subdivisions*, which show similarities with 'gated communities'. Because of the higher income of residents in these parts of the city, more recyclables could be retrieved at those locations. Others however, avoid the *subdivisions*, because in some of the cases runners and street pickers are obliged to leave some form of identification at the entrance of the neighborhood. There are also cases known where barangay-officials don not allow runners and street pickers to visit the area, according to the runners.

The area of *Downtown*, the center of the city and the neighborhoods *Shopping* and *Libertad* which share borders with the city center, stands out marginally in the preference of the runners. A lot of commercial activities take place in these areas, many junkshops are also located in the same region. On the other hand, some runners visit the rural barangays to exploit the remoteness of these areas and which other runners and street pickers usually do not attend to perform their job.

#### *Waste segregation*

Households are a major source of material for the runners. This embodies that waste segregation at household level is still happening to a certain degree in Bacolod. However, the activities of street pickers underline that still many materials remain un-separated and are discarded with the residual waste.

#### ***Municipal workers***

Officially the municipal waste collectors are not part of the private sector, however, they do play a role in the solid waste recovery sector informally. Data on waste recovery activities in

Bacolod by municipal garbage collectors is very limited. The recovery of waste is not the primary task of the municipal workers, and the workers usually don't provide exact information about the operation because it's not allowed officially.

The following data are based on interviews with municipal workers outside the office of the Department of Public Services, the municipal institution which holds the responsibility for the waste collection, as well as on observations of collection by the garbage collectors in the city.

The municipal waste collectors usually screen the collected waste quickly during the trip. Metals, cans, plastics and bottles are being separated and put into a large sac which hangs on the outer side of the dump truck or is placed on the roof of the truck driver. Paper and cartons are not extracted because it is less profitable than the other materials. In some cases garbage sacs are opened to look for valuable materials, in other cases these are not. A respondent explains that when a driver of the dump truck is in a hurry to finish the route, he tells the crew not to separate waste because it takes a lot of time.

The materials are stored for a period of two weeks or a month until a large volume is reached. This way, the municipal collectors can get a higher price for their materials.

The reason for the separation and barter of the materials is the generation of extra income. While the estimations of extra income vary extremely, a respondent shows a list written on a cigarette holder with the income generated by the sale of materials to junkshops over the past few months. He doesn't allow it to be copied, only a brief glance is granted. It appears that the sale in the past months have brought up P 775,- in May 2004, and similar figures for the preceding months. This amount is divided by five; one driver and four collectors, which is around P 150,- (which equaled around € 2.50 at the time of research) per worker per month. Compared to the official monthly income of the workers (P 5080,-) and the driver (P 7000,-) it isn't much.

### ***Waste Pickers at the dump site***

The final stage in which waste is extracted is at the last stop of the waste flow; at the dump site Lopez Mandalagan. For several waste pickers the site is their daily workplace, for others it is where their home is as well. Although illegal, various houses are constructed on the heap of garbage.

The waste pickers have organized themselves in the Bacolod Scavengers Association and the Bacolod Scavengers Cooperative, founded in 2003. The NGO International Center for Sustainable Cities assisted in the foundation. Non-members officially do not have access to the dump site to recover materials. During the stay in Bacolod, the numbers of waste pickers who were active on the dump site of Mandalagan was estimated on two hundred and ten (210), which equals the amount of members of the association.

When the garbage trucks arrive from their daily trips and unload the waste materials on the site, the waste pickers gather around it to get quick access to the materials. Various materials are separated: metals, cartons, plastics. A stick with an iron hook is used to screen the waste more efficiently and safely. Retrieved materials are usually put in a bamboo basket behind the waste picker (see also photo 4.3, page 47). Afterwards, closer attention is paid to the contents of the basket. The materials are sold to a middleman, a trading broker who in turn sells it to a junkshop located in Bacolod. The amount of waste pickers has risen since 1998 when Schutte performed his research. According to Schutte the numbers were believed to be around hundred (100) to hundred and twenty (120) in 1998. In August 2003 the amounts of waste pickers were estimated on 160 (Schliebs, 2003). The number of 210 waste pickers in 2004 should be stable for a while, as no new waste pickers are allowed to join the Bacolod Scavenger Cooperative.

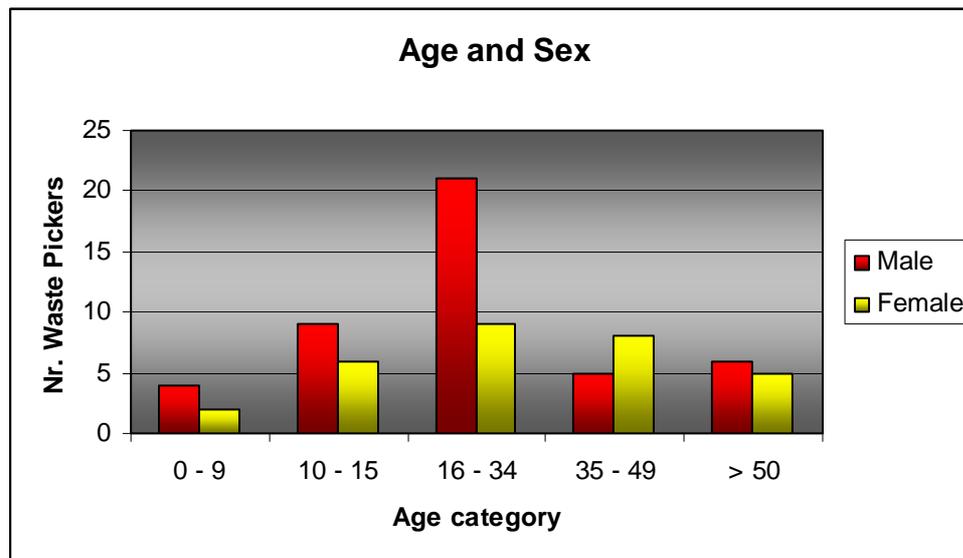
The dump site Lopez Mandalagan is situated on the east of Bacolod's residential areas (see figure 2.3, represented as research dump site). The site is private property which the Department of Public Services rents to deposit the city's waste. The site was opened in March 2004, but in August 2004 it already had to shut down. All the space was consumed by the rapidly growing amounts of waste.

A questionnaire has been performed to generate an image of the activities that take place on the dump site, to create a socio-economic profile of the group of waste pickers and to investigate the major issues encountered by the waste pickers. The following data is based on thirty (30) questionnaires, performed on the Manadalagan dump site. The questionnaire was completed in three days.

### Demographic data

A part of the questionnaire covers the entire household of the waste picker. Data on age, sex, education, whether or not active as a waste picker, and whether or not in school of the entire household is gathered to create a complete image of the demographic characteristics. For the characteristics 'age' and 'sex', the following figure is constructed:

Figure 4.5 Age and sex of waste picker respondents



Source: Questionnaires waste pickers

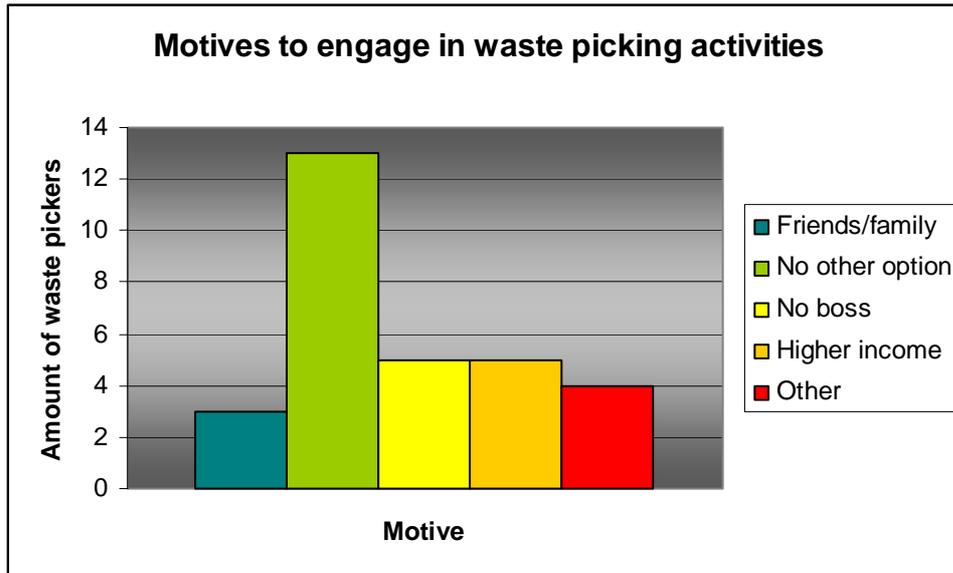
The diagram shows the waste picker population, according to age category and sex. Data of the respondent and the household members who are active in waste picking are included in the figure. In total data of seventy five (75) waste pickers are represented.

The male group between sixteen (16) and thirty four (34) is the largest group of the population. Another element which is represented in the figure is that there are more male waste pickers (45) than female (30) in every category of age except for the 4<sup>th</sup> group (35 – 49). The diagram also shows that some children under the age of nine (9) are active as waste pickers, as well as some elderly aged over fifty (50).

### Motivation

The most important motive for becoming a waste picker was asked to the respondent. The answers are categorized in the following options: 1) Family or friends were already involved, 2) It's the only job I know / No other options, 3) There's no supervisor / work independently, 4) I can get a relatively higher income, 5) Other reasons. The answers are represented in figure 4.6.

Figure 4.6 Motives to engage in waste picking activities



Source: Questionnaire waste pickers

The main reason for becoming involved in waste picking activities on the dump site is 'it's the only job I know, and I have no other option'. Thirteen (13) respondents gave this answer. A few of the waste pickers households who replied this answer engaged in waste picking activities because of personal 'shocks'; a house burned down or the husband died. See also box 4.3.

**Box 4.3**

Rosalina started working less than a year ago. She has five children, ranging from fourteen years to one year old. When her husband died less than a year ago, the household lost the economic assets to sustain their livelihood. They moved to the dump site, and live there at the time of interviewing. While some of the waste pickers have alternative income generating activities, she has none, and the household relies on the materials she and her eldest son recover. Her prospect at the future is that when other opportunities arise, she and her children will leave the dump site.

Names are fictive

The other motives are represented equally in figure 4.6. It's interesting to see that while many of the respondents see no other option; five (5) waste pickers opted to perform recovery activities to get a relatively higher income compared to other jobs. The term 'choice' is important here. It can be assumed that the group who answered 'higher income' has a choice, while the largest group does not. The same can more or less be stated for the group who answered that they prefer to work independently without a supervisor.

The category 'other reasons' was clarified by the waste pickers: one engaged in working on the dump site to collect fodder for a pig farm. Another waste picker answered that previously he was a fisherman, but considered it too dangerous. The former dump site in Magsungay was located near his house, so he had easy access to the waste materials. Another reason: when the city of Bacolod kept growing and expanding, agricultural grounds were lost for urban land use. When the *Hacienda*, a large plantation or farm, where the man worked closed down, he chose to engage in waste picking activities.

These 'other reasons' underline that motives to pick waste vary extremely, and must be analyzed carefully. When does someone have 'no other option'? Are decisions to engage in

waste picking activities made with a clear and conscious mind? Was the man who had to quit at the *hacienda* forced to work on the dump site? Did he have another option?

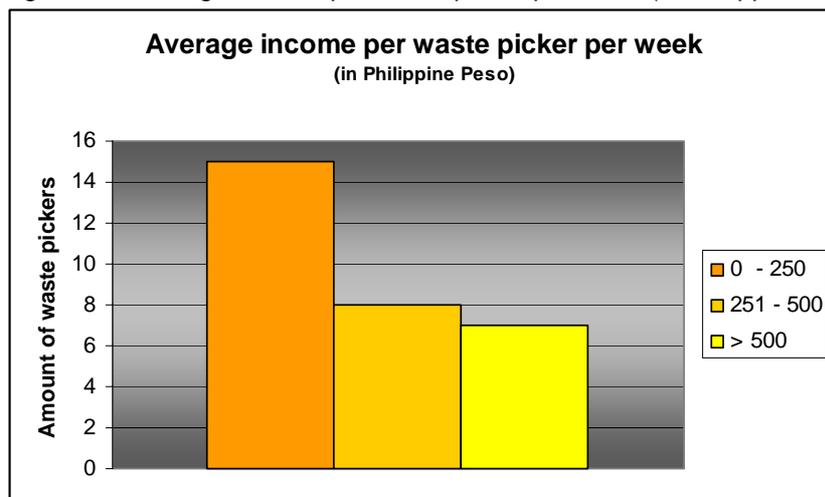
This data must therefore be treated more as an indicator why someone would start performing these kinds of activities. Interpretations of waste related activities and decision making should vary extremely between the different waste pickers. Additional research focused on this group is necessary to make more specific statements.

### Income

To inquire whether differences in income level exist within the waste picker population, the weekly income is measured. Four remarks are necessary. First, income levels are usually not registered by the waste pickers. Second, income can fluctuate heavily over time, while the measurement is a 'snap-shot' of the economic situation. Third, in some cases, income numbers of the entire household active on the dump site are provided, while in other cases the numbers concern individual earnings. A fourth factor is that in some cases instead of credit, the middleman pays out in food. In other cases the middleman demands a percentage of the earning to pay back an advanced loan.

In order to make comparisons, the income is measured per week, and per individual.<sup>10</sup> This however equalizes the internal household differences. The data should therefore be interpreted as an indicator. Other income generating activities are not represented in this data.

Figure 4.7 Average income per waste picker per week (in Philippine Peso)



Source: Questionnaire waste pickers

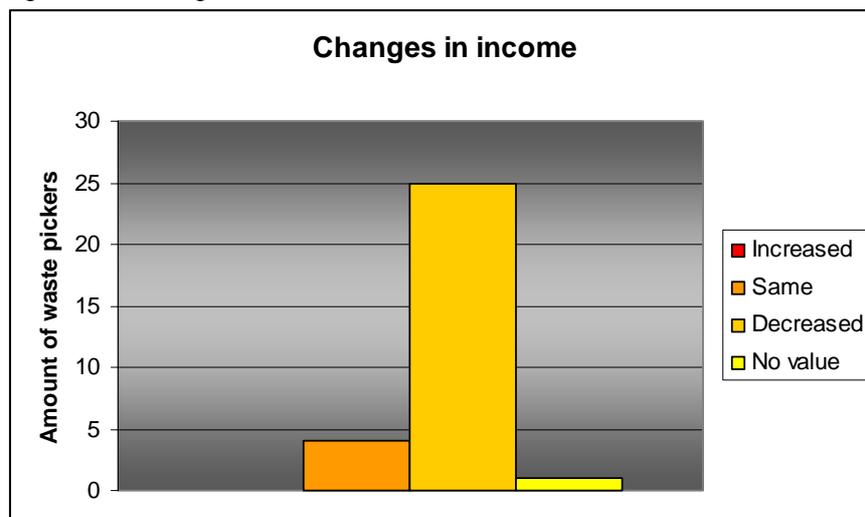
Figure 4.7 shows that internal differences do exist between waste pickers. The level of income is cross tabulated with various factors to investigate whether correlation exist with those other factors. These are: 'amount of years engaged in waste picking on a dump site', 'do you live on the dump site?', 'do you have alternative income generating activities?' and 'motive for becoming waste picker'. The outcomes are represented in appendix B.

The main conclusion from the cross tabulations is that there is no hard evidence that correlations exist between the level of income and the variables mentioned above. It is assumable that the cases are scattered randomly over the different variables. Observations show that a particular order of picking waste is not the case.

<sup>10</sup> Some of the waste picker households sell their materials collectively, while other sell individually. Household incomes were subdivided by the number of active waste pickers in order to make a comparison.

When asked whether the income has increased, decreased or stayed the same, compared to one or two years ago, the following answers were given figure 4.8.

Figure 4.8 Changes in income



Source: Questionnaire waste pickers

No waste picker responded with an increase in income, compared to one or two years ago. Twenty five (25) reply with a decrease in income. One person did not answer the question because she started working less than a year ago and was therefore not able to make a comparison.

Some waste pickers have alternative sources of income to generate extra income. Out of the total thirty (30) respondents, eleven (11) have other income generating activities at their disposal. These include: pig raising, construction work, Trici-cad driver, working in a *sari-sari* store (a little shop with household items, drinks and snacks), food vendor (vegetables, meat or fish). Some of these jobs, such as pig raising are directly related to the work on the dump site. Waste pickers also work in *sari-sari* stores situated on the dump site.

### Materials

The most important materials for the waste picker in terms of volume (in kilograms) are plastics (16), cartons (11) and 'special metals' (3). Plastics usually consists of household bottles, such as shampoo containers and bottles of mineral water. Cartons boxes are also extracted on a large scale. Tin cans form a major part of the 'special metals' category. Scrap Iron and glass are also recovered, but volumes are much lower. These materials are however preferred as they usually generate a higher income per kilo. See also box 4.4.

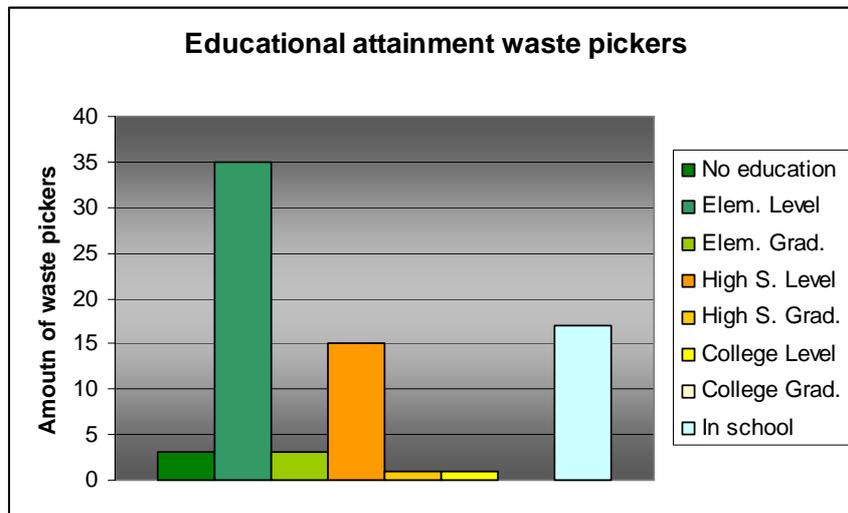
#### Box 4.4

During a day of performing the questionnaires, a dump truck arrived at the dump site with two discarded mattresses on top. Many young waste pickers climbed on the truck to be the first to claim the mattress, although this is prohibited by the Department of Public Services. The reason that many stormed the truck is that the mattresses contain an iron spring structure inside, weighing several kilos. This is a true treasure for a waste picker, worthy enough of crossing the line, and risking the penalty of being expelled from the dump site.

### Social-cultural elements

Waste pickers are believed to have a lower educational attainment than average people. The respondents and their household members who are engaged in waste picking were asked their highest level of education reached. Figure 4.8 shows the findings:

Figure 4.9 Educational attainment waste pickers



Source: Questionnaire waste pickers

The largest part of the waste pickers went to elementary school, but did not complete it. The amount of waste pickers that finished elementary level but did not attain High School is relatively low. A possible explanation for this could be that once someone is graduated for elementary school the step towards High School is easily taken. High School graduates and college level are relatively low. One waste picker attained College level in that time. For more information about this person, read box 4.5.

The amount of waste pickers that still goes to school is seventeen (17), out of which eleven (11) attain elementary level and six (6) go to High School. The education of the waste pickers' children is a major objective; when asked if the respondent has any plans for the future, eight (8) answered to let their children go to school.

#### Box 4.5

Juan is proud to be a waste picker. He has been doing this job for four years now. With the money he earned from extracting waste at the dump site he was able to pay for the education of his sister. She already graduated as a College student. His motive to continue waste picking is to finance his own education on college level, and to graduate.

However, he considers, income is going down compared to a few years ago. And the city dump site changes location very frequently, which he also believes that is a problem. Moreover, if the city will push through the segregation schedules on barangay level, less and less materials will find its way to the dump site, and it will be harder to make a living out of waste recovery. He supports the idea to set up a strong cooperative to work together. The cooperative can be used as a voice in the city government to complain against the private land owner.

Names are fictive

Of the thirty (30) respondents, fifteen (15) originated from outside the city of Bacolod. Some lived near the city, others came from others islands such as Cebu or Iloilo, or even from the nation's capital Manila. It's difficult to make statements about whether these people are predominantly rural migrants or not, because in some cases the cities official boundaries cover rural areas as well.

Ethnic minorities related issues are believed not to play a major role on the island of Negros. No observations were made on that topic. Cultural differences between waste pickers and other actors are estimated to be unimportant in this case.

### *Issues*

To examine the major issues identified by the waste pickers, the respondents were asked what they considered to be the largest problem to perform their activities. Many (eleven) answered that less and less materials can be recovered, some cases blamed the DPS for segregating valuable materials. Seven replied that the working conditions on the dump site are a real threat: sharp objects in the waste could inflict severe injury, some waste pickers claim that medical waste from hospitals is also dumped here, such as needles. But also the social conditions are considered to be a problem; piled stocks of materials are claimed to be stolen by one respondent, another answers that some waste pickers offend the ground-rules by climbing on dump trucks or by consuming large amounts of alcohol, resulting in drunken behavior. Others argued that they have no access to basic needs, such as sanitation, water, or medical attention. The seasonal climate sometimes makes these issues even worse. During the rainy season it is much harder to work at the dump site, as materials get wet. The surface of the site becomes very unstable. This often results in less income, especially for those whose income depends on recovering cartons.

### *Bacolod Scavenger Association / Cooperative*

According to the literature described in chapter one, a cooperative can be highly useful to strengthen multiple dimensions of the position of the waste pickers. These dimensions are generally described as: to give the waste picker community a voice in urban politics, to function as trade partner with large junkshops or recycling plants, to set up a financial network in case of emergency, to create a legal existence for the waste picker group and to increase the awareness among other people about their job to create a better image (Medina, 1997).

The Bacolod Scavenger Association was reorganized in 2002, after various attempts failed because of lack of investment and capital. Objectives of the organization at that time were formulated by the chairwoman of the Association, Mrs. Carmilita Asuelo: to provide the waste pickers with a legal working status; to set up a strong social and economic network; to be able to make an appeal on human rights as a group; to create a image of dignity among other people; and to create better opportunities for their livelihood. These objectives should be realized through the foundation of a junkshop which should be owned and operated by the waste pickers themselves.

The city government supported the foundation and reorganization of the association. The starting administrative expenses were covered by the city, and on the first and second anniversary of the waste picker association, the city government donated P 1000,- and P 2000,- subsequently. The city also provided a sound system for the anniversary celebration. Before, the waste pickers did not gain any support from the city officials.

In June 2004, the cooperative existed for one year officially. One year of legal existence is demanded by the city government to be recognized officially as a cooperative. The objective of the cooperative is to set up a direct linkage between the waste pickers and large junkshops. In this way, the middlemen on the dump site will be bypassed, and the income of the waste pickers should increase. The cooperative also has the assets to stock the materials until large volumes are reached. A higher price per kilograms can be attained.

The city government also supports this development. Officials already promised support from the City Cooperative Livelihood Development Office (CCLDO), through helping to find appropriate markets and by providing starting capital of P 100.000,- (around 2000,- US dollar). This will be considered as a loan until the cooperative has reached a certain point of

capital investment. After that point has been reached, the loan will become a gift. The waste picker association also generated capital from savings: P 4000,-.

The plan of the cooperative is to rent a site close to the dump site to stock the materials. The existing contacts between the middlemen and the junkshops will be maintained, but attempts will be made to find other trading contacts as well, with the help of the CCLDO. When the materials are sold, the revenues will be divided every three months among its members, according to volume and price per material.

#### *NGO support*

The Canadian NGO International Centre for Sustainable Cities (ICSC) has been active to support the waste pickers in Bacolod. Rubber boots were provided to some of the waste pickers. A project of swine raising among the waste pickers was established, but at the time of research, the project was phasing out.

**Photo illustration primary recovery sector**

Photo 4.1 Runner and Trici-cad



A runner delivers his materials to a junkshop. On the background other workers unload several materials from a truck. The Trici-cad can also be used for public transportation, notice the seats in the sidecar, which are later on covered with cushions.

Photo 4.2 Child street pickers



Children are roaming the seashore for materials.

Photo 4.3 Waste pickers at the dump site



Several waste pickers recover materials at the city dump site Lopez. The waste pickers put store the recovered materials in the bamboo basket behind them. On the background the dump truck is visible that just unloaded the materials. In the right-upper corner another dump truck is busy unloading. The sentence on the trucks side says: "Together let us keep Villamonte (a barangay) clean and beautiful".

Photo 4.4 Running for the dump truck



Young waste pickers hurry themselves after a newly arrived dump truck.

Photo 4.5 and 4.6 Oversight on the dumpsite Lopez, May an July 2004



In a period of three months, the amount of waste has grown quickly. The waste is dumped in a small valley, the surface lying around 6 meters below the waste.

Photo 4.7 Housing on the dump site, May 2004



Although illegal, some of the waste picker families live on the dump site. This is the edge of the dump site, a road comes nearby as well as electrical poles. Houses are constructed by sheets of plastic and cotton; other discarded items are used as furniture. A few weeks after the photo has been taken, this accommodation was already transferred to another location on the dump site. The trees were bulldozed to the ground.

## **4.2 Secondary Waste Recovery**

### ***Middlemen***

The middlemen are the mediating actors between the waste pickers and the junkshops. Materials are bought and sold to junkshops when a certain volume has been reached. On the Lopez dump site there are five active groups of middlemen. Junkshops provide the middlemen with an advanced loan. Usually, multiple junkshops are used as trading partner for different materials. Some of the junkshops also arrange transportation from dump site to the shops location. For the other junkshops, middlemen hire a lorry to organize the transportation themselves. Three are women, two are men. The operations carried out by the waste brokers are informal; the transactions are not registered, nor are the 'establishments' of the middlemen. Many middlemen were active as a waste picker before, some still practice waste segregation at the dump site.

### ***Junkshops***

The next step in the solid waste recovery sector is the junkshop; an establishment which buys and sells materials. The materials are stored in the junkshops until large volumes are reached and transportation costs will be kept low. In some cases, processing techniques are implemented, such as cleaning, cutting, compressing, separating, packaging, etcetera. These activities lead to an increase in the value of the materials when they are sold to other large scale junkshops, middle dealers or recycling factories.

The exact amount of junkshops in Bacolod are unknown, but during the stay (April – august 2004) various junkshop operators estimated the number to be around fifty to sixty (50 - 60). Own observations and listings conclude to a similar amount. The following statements are based on twenty interviews with junkshops operators. Junkshops are here referred to as commercial establishment that buys and sells waste materials, but rubber traders, tire re-cappers and establishments who buy and sell second hand motor parts are not included in the analysis.

A lot of establishments of junkshops were set up in the early 1970s and many followed a decade later in the 1980s. Most of the current junkshops did not start buying waste as a main activity, many were involved in the repair sector. When more materials, in volume but also type (i.e. plastics), entered the city through urban growth and in changing consumption patterns, small waste junkshops mushroomed in the city, but many did not survive. However, many small-junkshops are founded still.

Particular location patterns of junkshops establishments can not be detected. Although few junkshops are situated near existing or former dump sites, many are situated in the downtown area but in the cities outskirts as well. Note that a few junkshops were founded as a small family business over thirty years ago, expanding over time if the business ran successful.

Another note on the junkshops is that Sino-Filipinos are believed to be active in this sector. One junkshop operated interviewed had Chinese background, as well as the owner of one of the two port outlets in Bacolod. One other junkshop has a South-Korean owner. The role of this group is estimated not to play a major role in waste recovery in Bacolod.

### ***Junkshops operations***

A collection of photos is used to generate an idea on the junkshop activities (see photos 4.10 to 4.14 on pages 54-55). Some junkshops only store materials, others also process the stocks to get a higher price. The most common practices are: cleaning of bottles, segregating of different types of plastics according color, segregating different types of bottles, according to brand, and compressing of cartons. Some larger junkshops made investments in petrol based shredding machines for plastics. The plastic cullets are put in a sack afterwards, according to color. Blowtorch equipments are used to cut metal rods up to one meter each, a



Although it is difficult to distinguish a sharp boundary between small- and large-scale, some characteristics can be discerned<sup>11</sup>. Junkshops who have direct access to large brokers or recycling factories in Manila, Cebu or international locations, operate predominantly on large scale. Also important is whether or not a junkshop has access to capital, which can lead to capital intensive investments like processing equipment and large transportation facilities. Some larger junkshops have multiple establishments or branches spread over Bacolod, the island of Negros or on other islands. Small-scale junkshops are often family businesses, have little equipment and are dependant on advanced capital from larger junkshops, which in some cases forces them into a particular trading relation. As mentioned, some of the smaller junkshops who are member of a junkshop cooperation have direct access to a port outlet. The twenty junkshops that have been interviewed can be more or less divided among the following scale: eight large junkshops, ten smaller junkshops and two branches of large junkshops. The smaller junkshops generally offer lower prices to the waste sellers (such as middlemen, street pickers, runners or individuals) as they sell their stocked materials to larger junkshops. A lower price must be set by the smaller junkshops in order to make profit. Two cases will be represented to create better understanding of junkshop activities and structures. The data is based on 20 interviews with junkshops, ranging in size.

#### Box 4.6

##### Large-scale

Junkshop John-Paul started its activities in the 1975, with a starting capital of P 300,-. The establishment expanded to one of the major junkshops of Bacolod, currently employing over eighty people. Several processing techniques are used by John-Paul to increase the value of the materials: plastic sorting and shredding, aluminum compressing, metal cutting, etc. The processed materials are transported by truck to Cebu City (plastics), and are shipped to Manila and international locations (metals, glass).

A large heap of plastics is constructed on the area, like a dump site but a lot cleaner as organics are absent. The plastics are sorted according to type (hard or soft) and color. The plastics are then shredded into small cullets so that transportation costs can be kept as low as possible and the recycling process can be implemented more efficiently. The cullets drop into a bucket filled with water where they will float. Next, the small pieces are scooped of the water with a sieve, and are put in a large sack, which is able to contain 30 kilo of the material.

Several runners, street pickers and other smaller junkshops sell their waste at John-Paul's junkshop. First the materials are weight and noted according to materials. The note must be taken to the front office where payments are done.

Eight households working in the junkshop are housed on the junkshop area, the owner of the junkshop pays for water, electricity. Food and drinks are provided for all the workers at the junkshop.

##### Small-scale

Junkshop Allen was founded in 1991, and at the moment still a family operated business. Four people are working in the shop, which is relatively small. Except sorting, no processing techniques are implemented in the shop. Special metals are transported to Cebu Metals, an port outlet located in the city harbor. The owner is a member of the Bacolod Junkers Multi Purpose Cooperative.

##### Small-scale

Benny's Junkshop was recently set up in 2003, and is a family business as well. All the materials are derived from the municipal workers who are employed by the Department of Public Services. The junkshop is illegally located on a small plot along a road in the outskirts of the city. After large stocks have been piled up, the materials are sold to other junkshops.

Names of the junkshops are fictive

<sup>11</sup> A distinction based on annual income is difficult to make as not all the junkshops provided this data.

### *Junkshops cooperatives*

Two junkshop cooperatives are established in Bacolod. Negros Junkers Marketing (NJA) was founded first, and a second cooperative was set up later by ex-NJA members; the Bacolod Junkers Multi Purpose Cooperative (BJMPC).

The Negros Junkers Marketing (NJM) was founded in 1991, by eight junkshops who were at that time primarily involved in the buying and selling of scrap iron and special metals. Many of these eight junkshops can be categorized as large-scale, and have multiple branches scattered around the city of Bacolod or in other parts of the island of Negros. The objective of this organization was to strengthen the trading position with large dealers and the recycling industries. This could be realized by storing the materials until relatively large volumes are reached, and higher prices could be demanded to the trading partners.

The organization appeared to function effectively, and glass bottles were added to the assortment of the organization. Later on, however, scrap iron and special metals were traded individually again, and at the moment, the cooperative only deals with the buying, cleaning, storing and selling of glass bottles. Other objective at the moment, besides the bottle trade, is to exchange business contacts. At least two buyers should be interested in a deal with the junkshops, so that the junkshops can choose to take the highest bid.

Another change in the organization took place in the memberships. Out of the eight members who started the cooperative, three left discontented. Disagreements rose about the trading relations between the members, who were also fierce competitors in their businesses. The three junkshops who left started the Bacolod Junkers Multi Purpose Cooperative. The remaining five junkshop owners decided to not to accept new members to avoid further conflicts.

The Bacolod Junkers Multi-Purpose Cooperative (BJMPC) was established as an association in March 2000. The Canadian NGO International Centre for Sustainable Cities (ICSC) supported the foundation by setting up contacts between existing junkshops in Bacolod. However, the idea to create a new network for junkshops existed for a longer period. The city government of Bacolod decided to support the association's activities and wanted to be involved, so the association transformed to a cooperative. Main objectives were to create better trading contacts with large material traders and to demand a higher price by stocking materials. The amount of memberships grew up to twenty seven (27) in 2000. An office was created in the City Hall, financial lending programs were set up by the city government and ICSC and a senate member donated a motorcycle to the cooperative.

However, in the end of 2000, the cooperative collapsed because the funds were ill-managed according to Mr. Dinsay, chairman of the BJMPC in 2004. The chairman was voted out, and conflicts and distrust grew among the members. During the fieldwork in 2004, the cooperative was no longer active and no new meetings were summoned. The junkshop members believed to better of individually.

### **Port Outlets**

There are two major port outlets in Bacolod City who trade predominantly in scrap iron and special metals. These outlets function as a large-scale junkshop, who trade materials with large scale recycling factories or other brokers. Junkshops deliver the largest part of their materials. *Cebu Metals*, on of the two outlets, has set the minimum of junkshop deliveries on 1 ton. Exceptions are made for the members of the Bacolod Junkers Multi Purpose Cooperative. Although the cooperative is banned and no longer active, the agreement still holds with *Cebu Metals* to deliver smaller volumes of materials.

The port outlets have direct access to docks where containerships can moor. *Cebu Metals* ships the materials three times a year to major urban areas such as Manila or Cebu, or to international destinations, such as Singapore or Japan.

The other major port outlet *Teng Guan* is a Chinese owned enterprise, which ships materials to China.

**Photo illustration secondary recovery sector**

Photo 4.8 and 4.9 Plastic sorting



The woman in photo 4.8 sorts the waste according to color and cuts some of the larger parts into smaller pieces. Photo 4.9 shows a woman who takes the caps from water bottles. These women are called 'the mothers' by the junkshop crew.

Photo 4.10 Plastic shredding



The person in the upper left corner deposits the plastics, sorted according to color and type (in the sac), through the shredder. The cullets fall into a bucket filled with water where the plastics will float. Another person scoops the

cullets out of the bucket and puts them in another sac. Every week a truck transports 400 sacs, which weigh 30 kilogram each, to Cebu City.

Photo 4.11 Cartons



Cartons are being unloaded from a truck. The junkshop in the background sorts and compresses the cartons into neat packages. These cartons are derived from the city dump site. The cartons are later on transported to Cebu City by truck and ferry

Photo 4.12 Rum bottles



Rum bottles from one particular trade mark are stacked in the courtyard of the junkshop. These bottles are either sold to larger junkshops or sold directly to the rum factory nearby.

Photo 4.13 Port outlet



A heap of scrap iron is situated on the background. The men in the picture are junkshop operators, outlet workers and the researcher himself

Photo 4.14 Port outlet from a distance



Port outlet Teng Guan from a distance. It is located on the reclamation area: land that was sea before.

### **4.3 Relations primary and secondary recovery**

#### *Relation waste picker - middleman*

Middlemen practice the *Tara* rule, which literary means 'decrease'. This means that dealer will give the waste picker 90% of the materials actual value (which is set by the middleman), because they argue that some of the materials will be rejected by the junkshops and the risk during transportation, and to create a safety network for themselves. The *Tara* rule is not effective on piece materials like bottles.

Many of the brokers provide the waste picker with a loan. The loan is based on a verbal agreement, and a precondition is often that the waste picker is obliged to deliver his materials to the middleman who provided the loan. Materials must be piled up at the temporary location of the middleman on the dump site. A middleman does not have a fixed location on the dump site, it changes frequently. The waste dealers are present on the dump site every working day, so that they can monitor those who accepted a loan.

The amount of the loan varies per middlemen. One provides credit without interest up to P 500-1000,-, which is large compared to an average weekly income of around P 500,-. However, for large sums of credit, the middleman must know the waste picker personally. Also, waste pickers who are known to recover many materials will get a larger loan, because they will be able to cover the repayment more easily.

Paying back the loan will usually go in small steps. An example will illustrate this: if a waste picker has a loan of P 1000,-, and delivers for P 300,- worth of materials to the middleman, P 150,- is deducted from the loan, and the other P 150,- is paid in cash.

Another middleman provides a waste picker with smaller loans, which can be used for public transportation or food. In case of emergencies larger sums of money are granted (up to P 300,-), but the waste picker has to fulfill to certain preconditions. Materials must be stored in front of his stockpile, and is not allowed to sell materials to other middlemen.

#### *Relation waste picker – municipal government*

Glancing back at chapter 1, a hypothetical model was provided by Martin Medina, where he stated that general there are four types of attitudes from governmental structures towards waste pickers. These are formulated as repression, neglect, collusion and stimulation (Medina, 1997). Which types of attitudes from the city government towards waste pickers can be distinguished in Bacolod?

The city government provides support for the waste pickers at the dump site, such as capital support for the establishment and maintenance of the Bacolod Scavenger Cooperative, and through the City Cooperative Livelihood Development Office (CCLDO). Three seminars were given by the city government to teach the waste pickers to manage a cooperative. However, it has not lead to significant changes in working conditions or increasing livelihood opportunities so far.

On the dump site, some waste pickers received help from the Health Department in case of illness, and according to the city government, the Social Department is also active to support the most vulnerable groups of society through livelihood programs.

The city government does allow the waste pickers to operate on the city dump site if they are member of the Bacolod Scavenger Association and follow certain 'house' rules. These rules are set up by the Department of Public Services (DPS) and the Bacolod Scavenger Association. Generally these are: climbing on dump trucks is prohibited, no drugs or alcohol are allowed, access to the dump site is limited from 6 o'clock in the morning until 6 o'clock in the afternoon, open fire is prohibited, stocked recovered waste materials within the fenced areas are prohibited, waste pickers must wear an identification card, waste pickers are obliged to clean up the area, setting up structures are prohibited. Observations have shown that most of the rules are often offended.

The waste pickers are supported by the city government, but the group of waste pickers is not included in official national and city policies on waste management. However, a draft for solid waste management plans in Bacolod, set up by the Australian researcher Schliebs, does recognize the operations of the waste pickers:

“A further issue at the current dump site is that of the waste-pickers or scavengers who make a living by sorting through the dumped waste searching for reusable or recyclable materials that can be sold to junkers. Although this practice is now partially controlled at the dump site, the people involved are still working in very unsanitary and unsafe conditions with no protective equipment. Most of the waste-pickers live with their families including young children in a squatter settlement immediately adjacent to the dump site.” (Schliebs, 2003, p. 41)

The draft will form a basis for implementing the national solid waste management act on local level. Schliebs considers the impact of solid waste management programs on the livelihood of the waste pickers:

“It is important that any new SWM programs consider the impact on those people involved in the current informal system of recycling, i.e. the scavengers and waste-pickers. It is likely that city-wide implementation of source segregation and materials recovery will significantly reduce the livelihood opportunities of these people and they will need assistance to find alternative employment or livelihood.” (Schliebs, 2003, p. 37)

A possible outcome of the implementation of the solid waste management act is that the livelihood of the waste pickers will be affected. The city government acknowledges this possibility, but so far, no steps have been taken to involve the waste pickers in concrete policies.

Considering these actions from the city government towards waste pickers, it seems that the waste pickers are recognized partially in the sense that waste picking activities are legal on the dump site. An attitude of stimulation in the context of integrating and using the strengths of the informal private sector, i.e. the waste pickers, runners / street pickers, middlemen, is not applicable in Bacolod. An attitude of neglect would correspond with the actions mentioned above, although some help is provided.<sup>12</sup>

#### *Relation runner/street picker - junkshop*

In the literature it is believed that the relation between junkshops and those who provide the materials, in this case the runners and street pickers, are based on mutual trust. To test if a certain attitude of mutual trust exists between junkshop and runner, four questions were asked to the respondent:

- *Which junkshops do you usually go to (3 maximum)?;*
- *Dou you get advanced capital from junkshops either to buy materials or to buy food?;*
- *Do you get equipment like a Trici-cad or a pushcart from the junkshops you usually go to?;*
- *Would you go to another junkshops if you would get a higher price at those places?*

The hypothesis is that respondents, who get advanced capital or equipment from a junkshop, are less likely to go to another junkshop if they would get a higher price at those places. The following variables are used; ‘advanced capital’, ‘equipment’ and ‘change junkshop’.

First, the variables ‘advanced capital’ and ‘change junkshop’ are cross tabulated, for the first junkshop they answer, out of possible three junkshops. The junkshops are divided in primary,

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<sup>12</sup> A note is that the city government of Bacolod is proud to have won the title of the ‘clean and green’ program, a nation wide contest concerned with quality of the urban living conditions. The overall negative perception of waste pickers of the general public could affect the image of the city. This could be a possible explanation

secondary and tertiary junkshops, according to importance of income to the runner or street pickers, primary being the most important. Second, the variables 'Equipment' and 'Change Junkshop' are compared.

Table 4.1 Variables 'Advanced Capital' and 'Change Junkshop' for primary junkshop cross-tabulated

Primary Junkshop		Change junkshop?		Total
		Yes	No	
Advanced capital?	Yes	3	8	11
	No	2	7	9
Total		5	15	20

Table 4.2 Variables 'Equipment' and 'Change Junkshop' for primary junkshop cross-tabulated

Primary junkshop		Change junkshop?		Total
		Yes	No	
Equipment?	Yes	1	7	8
	No	4	8	12
Total		5	15	20

From table 4.1, it appears that out of twenty (20) cases, eleven (11) cases get advanced capital, and nine (9) cases do not. Of the eleven respondents who get advanced capital, eight (8) cases wouldn't change the junkshop where they usually go if a higher price was offered at another junkshop. Out of the nine (9) respondents who don't get credit, seven (7) wouldn't change delivering to that particular junkshop.

From this data, it seems that runners and street pickers are not likely to change of delivering to a certain junkshop, whether they get advanced capital or not. Mutual trust between the runners / street picker and the junkshop could to be the case.

Looking at table 4.2, eight (8) cases get equipment from a junkshop, twelve (12) do not. Out of the eight (8) respondents who get equipment, seven (7) wouldn't change junkshop. From the twelve (12) who don't get a pushcart or a Trici-cad, eight (8) would keep on delivering to their customary junkshop if a higher price would be offered elsewhere.

Looking at these numbers, it appears that the factor 'Equipment' doesn't correlate with the variable 'Change Junkshop' for the primary junkshop. Apparently, respondents have a preference to keep providing the primary junkshop with materials, not taking into account factors such as advanced capital or equipment lending.

The questions are also asked for the secondary and tertiary junkshop, if the respondent uses more than one junkshop as drop-off point for materials. The following table shows how many runners deliver at 1, 2 or 3 junkshops:

Table 4.3 Amount of junkshops per runner

Junkshops	Amount of runners
1	11
2	4
3	5

Because there are many runners (11) who don't deliver to a secondary or tertiary junkshop, fewer figures are available on these factors. The following data has been gathered:

Table 4.4 Secondary and tertiary junkshops and advanced capital

Secondary Junkshops		Change Junkshop		Total	Tertiary junkshops		Change Junkshop		Total
		Yes	No				Yes	No	
Advanced Capital?	Yes	0	1	1	Advanced Capital?	Yes	0	1	1
	No	6	2	8		No	4	0	4
Total		6	3	9	Total		4	1	5

Table 4.5 Secondary and tertiary junkshops and equipment lending

Secondary Junkshops		Change Junkshop		Total	Tertiary junkshops		Change Junkshop		Total
		Yes	No				Yes	No	
Equipment?	Yes	0	1	1	Equipment?	Yes	0	1	1
	No	6	2	8		No	4	0	4
Total		6	3	9	Total		4	1	5

These figures, although very limited, show different findings. From this data, it seems that secondary and tertiary junkshops are given up as a trading partner far more easily than the primary junkshop. However, the findings are based on such limited respondents that no major conclusions can be drawn from this data. More runners or street pickers in Bacolod should be questioned to create a representable basis for this hypothesis.

#### *Relation junkshop – municipal government*

Junkshops are included in the national policy on solid waste management. Generally, barangay communities should set up trading contacts with local junkshops to generate capital through waste.

Junkshops are represented by the ex-chairman of the Bacolod Junkers Multipurpose Cooperative in the Solid Waste Management Board in Bacolod. The national policy emphasizes the presence of a junkshop owner in the solid waste management committee on *barangay* level. However, the implementation of the policy is still in infant state and the role of junkshops in the city solid waste management policy remains unexploited. Interviews with junkshops show that no support is gained from the city government.

#### **4.4 Comparing primary waste recovery actors**

Now that all actors are identified and relations are represented, the runners/ street pickers and the waste pickers are compared.

Differences in income exist. Runners and street pickers are able to generate a higher income than waste pickers. The average income of each individual runners/ street pickers is P 155,- per working day, while the average income of an individual waste pickers P 350,- a week.<sup>13</sup>

Relatively more runners and street pickers have alternative income generating activities compared to waste pickers: fourteen (14) out of twenty (20) for the runners and street pickers against eleven (11) out of thirty (30) for the waste pickers.

A possible explanation for the differences in income is the differences in recovered materials. Runners and street pickers attain the largest part of their income through the buying and selling of scrap iron and special metals, while the waste pickers at the dump site are more dependant on cartons and plastic bottles. Scrap iron and special metals are relatively more valuable than cartons and plastic per kilogram. The runners and street pickers have the first opportunity to recover the materials which yield the highest profit. Municipal workers also have an easy access to the special metals and scrap iron. The waste pickers at the dump site get the 'leftovers'; the inferior materials in terms of price per kilogram.

<sup>13</sup> The numbers of income are represented by individual case for the runners and street pickers. As mentioned, some of the waste pickers pooled income with their households, while others did not. In the case of pooled income, total income of multiple waste pickers was divided by the amount of active waste pickers to get an estimate on individual earnings. This way, comparison with runners and street pickers is possible.

Another possible explanation for the differences in income is the role of the middlemen at the city dump site. Middlemen form an extra trading point in the recovery system. In order to make a profit, the middlemen offer lower prices for materials compared to junkshops. In other words, waste pickers at the dump site get lower prices for the same amount of materials compared to runners and street pickers, who have direct access to junkshops. Waste pickers are highly dependant to the middlemen, but several services are provided by them in case of emergency. The runners and street pickers endure this dependency to a far lesser extent. However, runners and street pickers tend to remain delivering at particular junkshops even when higher prices are offered elsewhere. It appears that a certain type of continuity exists in the social-economic relation between runners and street pickers on the one hand and the junkshops on the other.

The working conditions also vary. The working conditions of the runners and street pickers are not that good. They are roaming the streets every day, delving through street waste. But it can be easily stated that the working conditions at the dump site are far worse than those on the streets. The dump site is a breeding ground for many insects and rodents, and diseases are believed to be present as well.

The waste pickers are organized, while the runners and street pickers are not. The operations of the waste pickers association and cooperation could lead to a potential increase of the social and economic situation. Another advantage that the waste pickers have over the runners and street pickers is that the resources are concentrated in one location, the dump site.

From these observations, it can be stated that the waste pickers as a group are more vulnerable than the group of runners and street pickers. The waste pickers are economically dependant on the middlemen, have limited access to the 'superior' materials, and endure far worse working conditions. On the other hand, the waste pickers are organized in an association which has certain potentials to create social and economic advantages. The city government does not stimulate the waste picking activities on the dump site but limited support to the association and cooperation is provided. Overall, the city government mainly shows an attitude of neglect, regarding the hypothetical model represented in chapter 1. However, limited acts of stimulation are also observed.

#### **4.5 Concluding remarks**

This chapter described the private solid waste recovery sector in Bacolod City. Several actors are exploiting waste materials as a resource to create and support a livelihood or to run a business. Primary recovery takes place on the streets, in waste bins, at the doorstep of households and businesses, during municipal waste collection and on the city dump site.

A secondary recovery sector is present in Bacolod as well. The recovered materials are bartered through several dealers or junkshops. The junkshops are not homogeneous, differences in trading relation and capital investments exist. Subsequently, the materials are shipped through port outlets to national and international destinations.

The international literature discussed in chapter one addressed the general system of the waste cycle, of which waste recovery is a small link. It can be stated here that the private sector active in waste recovery in Bacolod can be interpreted as similar to the systems described in the literature; no major differences were identified.

The primary solid waste recovery participants show major differences in characteristics. While runners, street pickers and waste pickers at the dump site appear to share similarities at first sight, major differences exist between these groups. The largest difference is the extent of vulnerability. However, differences exist also within groups.

The secondary solid waste recovery sector shows a calculated model of interaction. Many small junkshops provide a few large junkshops with materials. Small junkshops often show an extent of dependency of the larger ones.

Nonetheless, all the actors share a characteristic. All regard waste materials as a potential resource.

The national and city government also started to realize the value of waste materials. A national policy has been set up to exploit waste materials on barangay level. The policy is tested in three pilot projects in Bacolod City. Chapter 5 will provide an analysis on these projects.

## Chapter 5: Implementing Republic Act 9003

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*This chapter discusses the implementation of the Republic Act 9003 in Bacolod City. Three city-initiated pilot projects are described, as well as one project set up by a barangay and one project started by an NGO. Major pitfalls encountered during implementation of the projects are identified, and possible relations with the private sector engaged in solid waste recovery are addressed.*

In the year 2000, the national government of the Philippines approved a Republic Act which would change the characteristics of the solid waste management systems. The new policy should be implemented in 2002. Major changes in the solid waste management systems are the shifting of responsibilities from municipal governments towards Local Government Units (LGUs), waste segregation at the source and the encouragement of the private sector to participate in solid waste management. Chapter three already covered these changes into detail, identifying the transformations as part of concepts of decentralization.

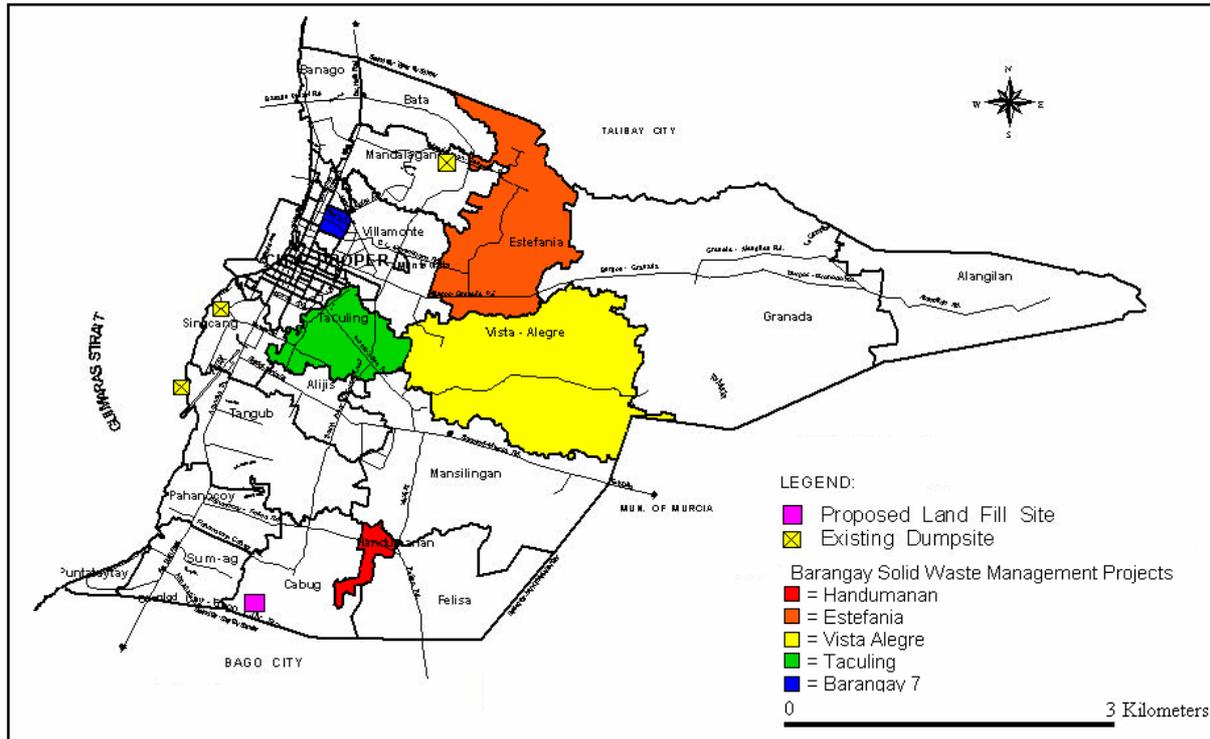
In Bacolod City, the Republic Act translates itself through the City Ordinance nr. 310. The City Ordinance should comply with the guidelines set in the Republic Act. Three LGUs were selected by the municipal government to test the ordinance. Pilot projects should indicate whether the new approach would work or not and to identify major pitfalls for full-scale implementation. These projects were visited and interviews were held with key-respondents to inquire how the new policy is turning out for Bacolod City. Also, other RA 9003 related projects set up by a barangay and an NGO named *Balayán*, were visited and questioned.

This chapter will provide an overview on these five projects. Relationships with the private sector are analyzed. First, the characteristics of the five projects are described. The major problems encountered during implementation will be discussed. Then, the relationship with the different solid waste recovery participants will be analyzed. The chapter will conclude with the major findings.

### **5.1 The pilot projects**

Three barangays were chosen by the city government to test the implementation of the Republic Act. According to city officials, the barangays are located in different environments: barangay Handumanan as urban region, barangay Estefania as semi-urban/ rural region, and barangay Vista Alegre as rural region. The municipal government claims that this way, the outcomes can be analyzed according to geographical features. The choice for implementation these particular barangays is unknown. Figure 5.1 shows the locations of the different barangays.

Figure 5.1 Locations of five solid waste management projects in Bacolod City



Source: Map adapted from City Planning and Development office, 2004

### Handumanan

Barangay Handumanan is located at the southeastern outskirts of Bacolod City. The region is identified by the city government as urban. During the fast growth of Bacolod City in the 1970s, Handumanan was chosen to absorb the flow of migrants from rural areas. Many squatter citizen who lived elsewhere in the city also moved to this area. At the moment, the barangays land use is predominantly characterized as residential area.

The choice for Handumanan as an urban barangay seems debatable, as it is situated far from the city center, in figure 5.1 represented by the dense grid of streets on the left side. Other typical urban features such as high degree of commercial establishments seem not be the case for Handumanan.

The project started in February 2003. A solid waste Management committee was established to execute the concepts. The key objectives formulated by the solid waste management committee are: to support proper waste collection and disposal, to promote waste segregation at household level, to set up a composting facility to process biodegradable waste, to encourage and implement recycling initiatives and to create a livelihood from waste. Members of the committee include a representative from the private sector; an operator of a junkshop which is situated in the barangay. A representative from an NGO, the Negros Economic Development Foundation, is also present in the committee.

A compost facility has been set up on public property, behind the barangay hall where community activities take place. A concrete box without top is used for storage and processing of the biodegradables. The biodegradables originate from the barangay street cleaners<sup>14</sup>. When the composting process is completed, the residue is used as organic fertilizer on a community garden where vegetables are grown. The products are sold later on by the street cleaners or are used for communal consumption.

The barangay also has an operational Material Recovery Facility (MRF) where recyclables are stored until a certain volume is reached. The junkshop who is represented in the

<sup>14</sup> Barangay street cleaners are people employed by the barangay to sweep waste from the streets

committee buys the materials from the MRF. The materials that are stored in the MRF range from glass, to metals, plastics, paper and cartons. Street cleaners deliver the materials alongside a few households who bring materials individually.

The total income of the vegetable garden and the MRF is unregistered, it goes straight to the street cleaners. The project also involves an Intensive Education Campaign (IEC), scholars are taught about the solid waste issues and about waste segregation. House-to-house visits are made, and seminars are conducted.

Major issues are encountered during implementation. The first problem identified by the solid waste management committee is financial shortcomings in terms of monthly payments from the city government. The barangay is often not able to pay the salaries of the street cleaners. Second, few households are actively engaged in waste segregation. Official enforcement through penalties is not an option for the barangay, however, ordinances are being set up to change that in the near future.

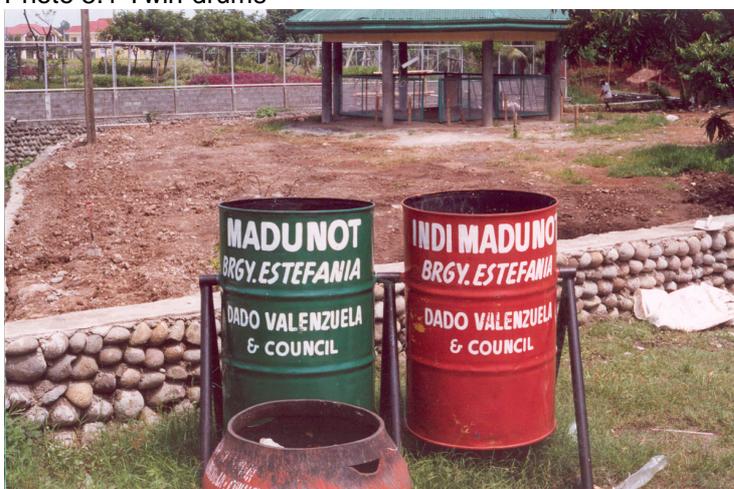
Other waste related issues, but not directly to the project are that improper waste disposal is widely happening. The Department of Public Services (DPS) collects waste in Handumanan twice a week, but according to the barangay captain (political leader), this is not sufficient. The barangay captain claims that there is an urgent need for operational dump truck, so that the barangay can collect waste itself.

### *Estefania*

Barangay Estefania is located on the eastern borders of the city of Bacolod. It has been described by the city government as semi-urban/ rural. Land use is a mix of agriculture, residential and commercial establishments. The project started in 2003, a solid waste management committee has been set up, which constructed a solid waste management plan. The objectives of the plan were formulated as: to clean the surroundings and to provide a livelihood of the urban poor. To reach these goals, nine relatively poor residents from the barangay were employed to collect waste from the households. The collected waste is segregated by the employees and recyclable materials are sold to a junkshop. Three Tricicads are used as instruments for collection. These waste collectors receive a monthly salary of P 2000,- and generate an unknown amount extra earnings by selling of recovered recyclables.

As part of the project a small barangay dumpsite near the barangay hall has been transformed in a communal garden. A cockfighting pit has also been constructed on the heap of the former dumpsite. Twin drums (re-used oil drums) are used for waste segregation. See also photo 5.1.

Photo 5.1 Twin-drums



Two re-used oil drums are used for waste segregation: *Madunot* (organic) and *Indi Madunot* (not organic). On the background the communal garden and the cockfighting pit.

A composting facility and a MRF are not constructed so far, but according to a barangay official, plans are waiting for approval of the city government. The barangay does not have any enforcing instruments at hand to combat improper waste disposal or pursue waste segregation, but they are waiting for the approval of the ordinance by the city government. The DPS collects waste in the barangay twice a week, which is not enough according to the barangay captain. Improper waste disposal however, is not happening in this barangay.

Residents in Estefania are not segregating the household waste, but according to the barangay captain, this is not an issue because the waste collectors will segregate the waste anyway after collection. The captain states that the true problem with the implementation of the project is the lack of capital, which should be provided by the city government. Another issue is claimed to be the lack of an operational dump truck and a shredder to hasten the composting process.

Although households are not segregating the waste according to the guidelines set in the City Ordinance (biodegradable, recyclables, residue), seminars and educational programs on schools in the barangay are provided to inform the population about waste related issues.

### *Vista Alegre*

The third pilot project is situated in the rural hinterland of Bacolod City. East of the cities outskirts lies barangay Vista Alegre, which is surrounded by agricultural lands. Sugarcane dominates among the crops that are grown in the vicinity. The project started in 2003, and similar to the other pilot projects, a solid waste management committee was founded, and a barangay solid waste management plan was formulated. The main objectives are to protect public health and to reduce street waste.

Because of the remoteness of the barangay, the Department of Public Services does not collect waste in Vista Alegre. If any waste must be collected, barangay street cleaners transport the waste to neighboring subdivisions which DPS dump trucks do attend during their trips. Households are not segregating, although several seminars were held to inform the residents about these matters. According to the barangay captain, the volume of materials that can be recycled is very limited. Most of the households live according to traditional rural customs, and consumption of modern goods is low; most of the waste is organic and back yard composting is widely practiced. This is also promoted by the barangay officials.

The project involves an MRF and composting facility, but both are not functioning. Some materials are stored in the MRF, but from the beginning of the project until July 2004, limited recyclables were stored. The materials in the MRF originate predominantly from the barangay governmental office and from the street sweepers. So far the MRF did not generate any income.

A major issue the project has encountered or will encounter in the near future is described by the barangay captain as inconsistency of fund releasing by the City Government. This results in problems with operation and planning. Another issue is the malevolence of the barangay population to pay a garbage fee in the subdivision. A garbage fee is necessary to finance the operations of the DPS in this region.

Although waste is not a pressing issue in Vista Alegre, the barangay school informs the children about the waste related problems and teaches them not to dispose of waste materials in inappropriate ways. Flyers are spread among the population to inform about waste related seminars and about issues in general.

## **5.2 Other projects**

### *Taculing*

The next project has been initiated by a barangay individually. Taculing is a residential barangay situated southeast of the downtown area. In September 2003, barangay officials started a project to combat the solid waste issues and to create awareness among the

barangay residents. Like the other pilot-projects, it still is in its initial phase, and a solid waste management committee and a solid waste management plan have been established. The objectives of the solid waste management plan were described as: to establish twin-drum collection points (two former oil barrels, one for organic waste, one for non-organic waste, see also photo 5.2) along the main road in the barangay; perform an information campaign among households to persuade them to bring out the garbage properly in front of their house, so that the waste collectors can pick it up and bring it to the twin drums; to teach households to segregate their waste in bio-degradable and non-biodegradable, so that the collectors can search the waste more easily and safely for recyclables. The collectors are already asking the residents to separate the waste into these two categories. The twin drums are set up along the main road, so that the DPS can pick it up in a shorter time period.

Photo 5.2 Twin-drums overloaded



Photo 5.2: The twin-drums are overloaded with waste. Note also that plastics are being disposed in the organic drum.

Photo 5.3 Taculing Trici-Cad at junkshop



Photo 5.3: A worker from barangay Taculing is selling the recyclables he recovered during collection to a junkshop nearby.

Before there were eleven persons working as waste collector, but at the moment, the barangay is employing seven people to collect the waste. Peda cabs are used to bring it to the central collection points. The selection criteria for choosing the workers were formulated as that they have to live in the barangay and that they have problems with finding a proper livelihood. Their income is P 2500,- to P 4000, - per month; it depends on the time they are in service, but extra income can be generated through selling recyclables to a junkshop (see photo 5.3). The collectors usually work three days a week. The barangay also has access to a small dump truck to collect waste and transport it to the city dumpsite.

The barangay already has an area for composting ready; a shredder can be arranged through the DPS. The barangay also has an area where vegetables can be grown. Nutrition scholars employed by the city hall visit poor households in Taculing, and if the people suffer from malnutrition, they are taken to the barangay garden to learn how to grow their own vegetables. In the future, the compost can also be used by those people.

According to the barangay captain, the project has encountered many problems already. First, the major issue is the lack of frequent funding by the city government. During the stay, a change in administration at the city hall has made future funds for the project uncertain.

Second, households are not segregating their waste, but a remark is here that the barangay did not inform the residents about these matters yet.

Third, the barangay has no enforcing instruments to penalize those people who dispose their waste improperly, which is widely happening in Taculing.

Fourth, a problem of a different dimension is formed by some people who steal the iron twin drums to sell them to a junkshop. The drums have to be attached to concrete with steel bolts. General waste related issues are that the children, who get the task to bring out the waste to the drums, make a game out of it by throwing waste from long distance in to the bins, scattering the waste around. Stray dogs that scatter the waste while they are delving for food form another issue. The street waste causes a soar to the eye.

The DPS collects waste three times a week, but there are many times when the material of the DPS is out of order and not able to collect. This results in the overflowing of the twin drums.

The barangay officials did distribute flyers with information to bring your waste to the street properly; they also conducted meetings with the barangay population.

The city government advises the barangays to cooperate with the private sector and NGOs when setting up a solid waste management committee and a solid waste management plan, however, the committee has not yet approached these parties as they want to take some initial steps first.

### *Barangay 7*

Another project has been started in barangay 7 by *Balayan*, a community outreach office of the University of La Salle. The barangay is situated in the urban area of Bacolod, between two major roads in the city, Lacson Street, and Lopez Jaena Street. The actual implementation of the project started in July 2003. A solid waste management plan has been constructed by *Balayan* and barangay officials. Other groups that are involved in the project are the 'clean and green 7 action team' and an engineering committee. The objectives were described as: to lessen the residual waste by 50%; to stimulate at least 75% of the households to segregate their waste; to recycle and compost 40% of the waste volume. Besides the objectives to practice a more environmentally friendly solid waste management system, the project goal is also to function as a showcase for other barangays in Bacolod City.

To achieve these objectives a house-to-house education campaign was performed and demonstrations are provided of proper composting techniques. The earnings generated by a Material Recovery Center should sustain the project costs, however, at the time of research this goal seemed out of reach.

Livelihood opportunities are created with the MRF and the composting facility. The composting process takes place in a communal garden. The compost is then used for growing vegetables, which are in turn sold on a nearby market. The barangay has access to a petrol based shredder to cut the organic waste materials up to small pieces. This will hasten the composting process considerably. Bacteria are also used to quicken the time in which the organic waste materials are transformed into the humus-like soil.

The biodegradables are largely derived from fruit salesmen in the barangay, from *buco-juice* (coconut drink) salesmen, from *Burgos* public market and to a lesser extent from barangay households.

Aside lot gardening, vegetables are also grown in pots. These pots are often discarded by the former user as waste materials: rubber tires, computer monitors, paint cans. Before, the lot was used as a private dumpsite, which contaminated the soil. The use of pots negates this disadvantage and it shows that these objects can be used for other, sustainable purposes.

Two men are working in the garden on a contractual basis: a composting technician and an agricultural technician. Officially, their income, which is provided by the barangay, is P 1000,- a month (€ 15,-), but during the municipal election time barangay funds were frozen as these

might affect the outcome of the election. *Balayan* covered payment of the salaries in that period. Besides the two men, there are many volunteers who work in the communal garden. After harvest, the vegetables are sold to a vendor and a part is used for communal use. The total income generated by the garden so far is P 1500,- in a period of two months. As mentioned the barangay also has an operational MRF, where recyclable waste is segregated in different categories: plastic bottles, scrap metals, paper, cartons, and glass. The recyclables are brought there by the households. At the moment of research, the barangay sold a stock of plastic bottles, paper and cartons once to two junkshops, getting a refund of P 470,-. Other materials were not yet sold at that time. The barangay has performed an Intensive Educational Campaign to inform the people about the effectiveness of waste segregation. House-to-house visits were made, in cooperation with students of the University of Saint La Salle.

The project struggles with several issues. First, there are some difficulties with the collection of biodegradables, as a small percentage of the households are actually segregating their waste. There are however a few households who segregate organic waste to use as pig fodder. At the beginning of the project, the majority of the households (60-80%) were willing to cooperate, probably due to the educational campaign. But a few months later, the households started to attain the traditional patterns again, and the effect of the campaign seems to be tapering off.

Second, methods of illegal waste disposal, such as dumping, burning or burying are still widely practiced in the barangay. To combat and judge these activities, a barangay ordinance is constructed in which penalties for such actions are included. This will provide the officials with a legal instrument.

Third, another issue is related to the functioning of the MRF. The MRF has difficulties with generating materials because there are many runners active in the barangay. These runners are usually paying higher prices than the MRF.

A final issue is that the future of the project remains uncertain. *Balayan* emphasizes that the barangay should be able to sustain the project on its own in time.

Another general problem is that the DPS visits the barangay twice a week to collect waste, but according to residents, this is not enough. During the stay in Bacolod the waste remained uncollected for periods up to two weeks.

### 5.3 Comparing the projects

The characteristics of the barangays and are projected in the tables below.

Table 5.1 Characteristics barangays

Barangay	Location*	Dominant Land Use	Population (2000)	Relative Population Density**	Project Initiator
Handumanan	Urban	Residential	17.760	Very High	City Government
Estefania	Semi urban / rural	Residential / Agricultural	18.690	Low	City Government
Vista Alegre	Rural	Agricultural	8.380	Very low	City Government
Taculing	Urban	Residential	34.330	High	Barangay
Barangay 7	Urban	Residential	3.420	Medium	NGO

\*As identified by the office for development and planning, city government

\*\* As no data was available on the square surface of the barangays, relative population density is estimated using a the city map and population numbers.

Source population numbers: Bacolod City Government, 2005

Table 5.2 Project data per barangay

Barangay	Main objectives formulated by barangay	Implemented features	Main project related issues formulated by the barangay
Handumanan	<ul style="list-style-type: none"> <li>- waste segregation at household level</li> <li>- communal composting</li> <li>- livelihood initiatives</li> <li>- recycling initiatives</li> </ul>	<ul style="list-style-type: none"> <li>- compost facility</li> <li>- operational MRF</li> <li>- communal garden</li> <li>- education campaign</li> </ul>	<ul style="list-style-type: none"> <li>- financial shortcomings</li> <li>- few households segregate waste</li> </ul>
Estefania	<ul style="list-style-type: none"> <li>- clean surroundings</li> <li>- provide livelihood for poor residents</li> </ul>	<ul style="list-style-type: none"> <li>- 9 vacancies for waste collector</li> <li>- education campaign</li> </ul>	<ul style="list-style-type: none"> <li>- financial shortcomings</li> <li>- lack of dump truck and shredder for composting</li> </ul>
Vista Alegre	<ul style="list-style-type: none"> <li>- protect public health</li> <li>- reduce street waste</li> </ul>	<ul style="list-style-type: none"> <li>- MRF, not operating</li> <li>- compost facility, not operating</li> <li>- education campaign</li> </ul>	<ul style="list-style-type: none"> <li>- inconsistent fund release</li> </ul>
Taculing	<ul style="list-style-type: none"> <li>- waste segregation at households level</li> <li>- proper waste behavior</li> <li>- establish twin-drums</li> </ul>	<ul style="list-style-type: none"> <li>- twin drum collection points</li> <li>- waste collectors employed</li> </ul>	<ul style="list-style-type: none"> <li>- inconsistent fund release</li> <li>- twin-drums are being stolen</li> </ul>
Barangay 7	<ul style="list-style-type: none"> <li>- lessen residual waste by 50%</li> <li>- waste segregation for at least 75% of the population</li> <li>- compost 40% of the waste</li> </ul>	<ul style="list-style-type: none"> <li>- Operational MRF</li> <li>- Operational compost facility</li> <li>- education campaign</li> </ul>	<ul style="list-style-type: none"> <li>- amount of households segregating waste is tapering off</li> </ul>

When the issues of the five projects are compared, it appears that the major problem identified by barangay officials is the lack of financial assets and the irregularity in which these assets are dispensed by the city government. Another problem which is recognized by all projects is that households are often not willing to segregate waste. As possible outcome is that the Material Recovery Facilities seem not to have worked out as planned, at least not yet. In few cases, materials stored in the MRFs were sold to junkshops. A next issue is the illegal disposing of waste; burning, burying and dumping occurs still to a great extent in the projects areas as well in the rest of Bacolod City. However, it should be stated here that 'waste behavior' is part of customary patterns, which can not be changed overnight. Another

remark is that the Department of Public Services often struggles with technical failures. Uncollected waste seems to be the result.

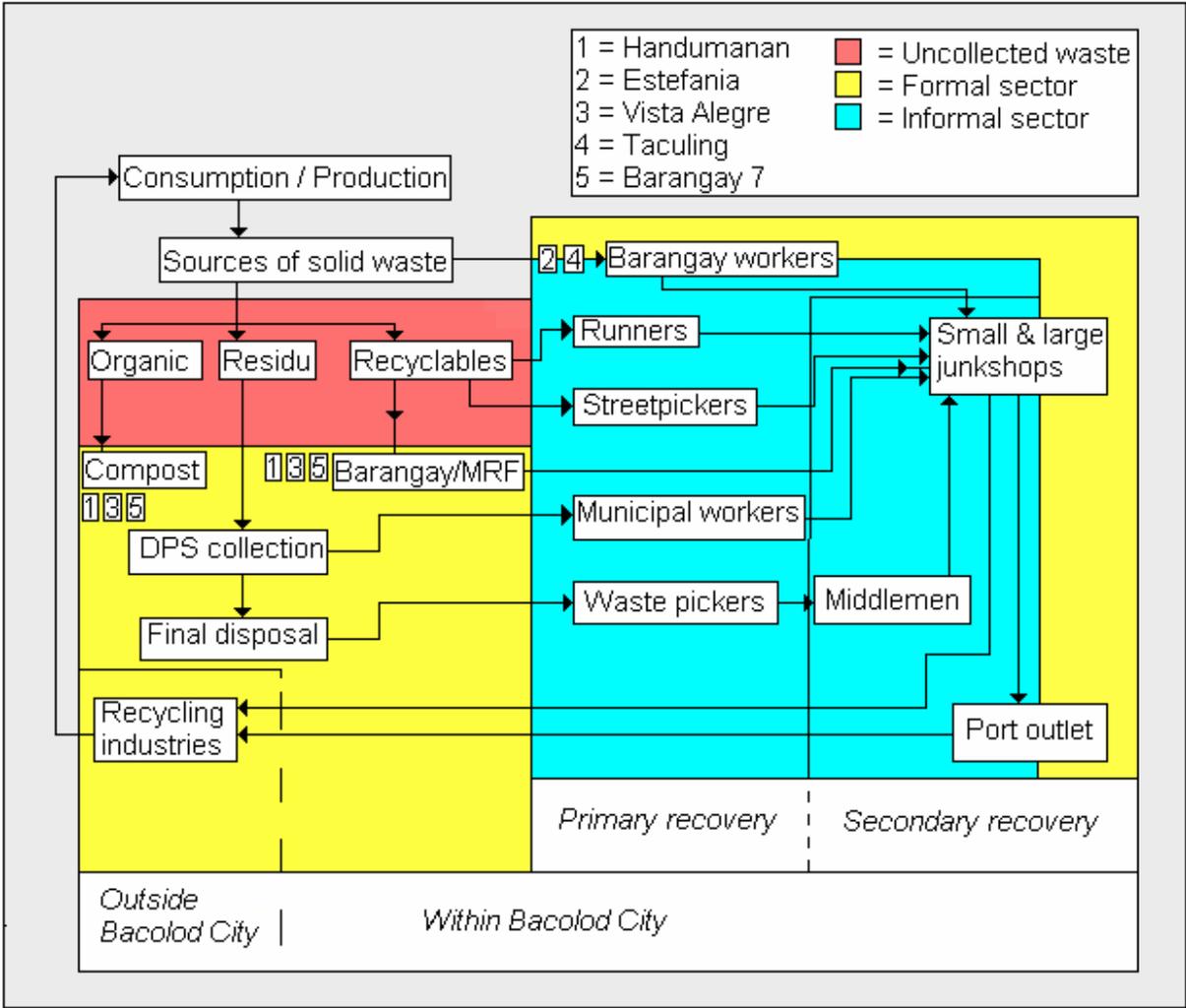
The three barangays seem to interpret the City Ordinance 3.10 described in chapter 3 differently. The project in Handumanan seems to follow the guidelines set by the City Ordinance narrowly, while barangay Estefania implements the project by creating nine vacancies for residents who have a hard time creating a livelihood. Barangay Vista Alegre claims that waste related issues are not important in their barangay because of the traditional rural customs where waste generation of modern materials is very low.

A comment on the implementation is that in some cases the livelihood factor of the projects is not measured, i.e. the income generated by the selling of recyclable materials by project participants. If project aims to change livelihood opportunities, it would be sensible to identify those earnings. However, it must be stated here that several difficulties could arise when attempting to calculate the importance of selling recyclables for a street sweeper.

**5.4 Relation projects to the private sector**

Although all projects should be following the guidelines set in the Republic Act and the City Ordinance, each barangay more or less chooses a different approach for implementation. This is also a consequence of the decentralization process. As a result, each project will intervene on different places in the structure of the waste recovery sector, as projected earlier in figure 4.1. The figure below shows the positions of each project.

Figure 5.2 Positioning the projects in structure of waste recovery



The figure has been adapted to the guidelines and assumptions made in the Republic Act. Hence, the sources of solid waste are subdivided in organic waste, residual waste and recyclables.

Barangay Handumanan (nr. 1) has an operational MRF as well as a composting site. Both are working in the formal sector, as registrations are made. Estefania (nr. 2) made the choice to employ nine relatively poor residents to collect unsegregated waste. The collection activities of these people is formal, as they receive a monthly payment from the barangay. The selling of recyclables to junkshops are however not registered and therefore belong to the informal side of the economy. In the figure, the barangay workers are placed in the formal and the informal sector. Barangay Vista Alegre (nr. 3) has a composting facility and a MRF, although not operational. Taculing (nr. 4) uses barangay workers to collect waste. The workers also recover recyclables to generate extra income. Barangay 7 has an active MRF, a composting facility with shredder and a communal garden.

According to the figure, the projects in the barangays Handumanan, Vista Alegre and Barangay 7 share similarities to some extent. The same is the case for the projects in Estefania and Taculing. However, it must be noted that internal differences are present that are not represented in the figure. These would make the figure too complex to be useful.

The City Ordinance prescribes guidelines for the barangays on how to practice solid waste management. A solid waste management committee must be founded by the barangay, or in cooperation between different barangays. It is preferred that the private sector is represented in this committee by a junkshop operator who is willing to buy the waste materials gathered by the barangay, and to provide information about changes in material markets. Barangay Handumanan is the only project in which a junkshop operator is included in the solid waste management committee.

The materials stored in the Material Recovery Center are sold to a junkshop. However, the MRFs in all projects do not seem to function as planned, at least not yet. One possible explanation for not functioning is that the private sector interferes in this process; runners are able to pay more for a particular material than a MRF. Runners claim that they are prohibited to work in some barangays for this particular reason. It seems that the municipal governments are attempting to compete with the informal sector. Earlier attempts to compete with the informal sector in Manila have shown that this often does not work out (see chapter 1). What can be drawn from this example is that the Republic Act, nor the City Ordinance include the informal sector in its implementation.

Glancing back at chapter 4, where different livelihoods who depend on waste materials were described, one can question what outcomes the full implementation (i.e. on city level) of the waste policy will have on these people. When all the materials which are segregated at household level are sold to a barangay operated MRF, the livelihoods of runners, street pickers and waste pickers at the dumpsite will be endangered severely. This outcome was already laid down by Schliebs (see chapter 4). However, the Republic Act and the City Ordinance seem to ignore this informal recovery sector. A guide for barangays to implement RA 9003 does however speak of these matters:

“If new staff need to be hired [for implementation of the projects: retrieving materials, make compost, sort recyclables], the Barangay may consider hiring people who are currently involved in waste picking or scavenging. These people, who make a living by scavenging and selling recyclable materials, may lose some of their livelihood as more and more recyclable materials are diverted to the Barangay MRF.” (City Planning and Development Office, 2003, p.11)

But again, Schliebs also assisted in the construction of the guide from which the quotation above is derived. The future will show whether the MRFs will function according to plan and whether the informal sector is able to sustain itself or not.

## Chapter 6: Conclusions and recommendations

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*This final chapter will summarize the major conclusions drawn from the analysis done in the previous chapters. Recommendations for future studies will be given.*

The preceding chapters have addressed several waste related activities in Bacolod City, the Philippines. A clear focus is laid on waste recovery, a particular process in the entire waste cycle. First, a theoretical framework provided several approaches and characteristics on waste recovery systems. Second, the geographical background of these activities was briefly described. Third, previous research performed in Bacolod was summarized and discussed, along with some basic information about waste composition and different waste producers. Fourth, characteristics and structures of the private sector active in waste recovery in Bacolod were identified and analyzed. Fifth, the implementation of the Republic Act, encompassing new approaches towards waste behavior and waste management, was studied. Possible relationships with the private sector were suggested.

This final chapter functions as a closure of the remarks and statements made in the foregoing chapters, it means to wrap up the conclusions made in this research. However, by no means it is suggested here that the solid waste recovery system in Bacolod is a 'closed case', as the system is ever changing. Discussions about the positions of waste recovery within solid waste management, formal *and* informal, have only just begun. Recognition of the value of especially the informal sector comes more and more into the arms reach.

### **6.1 Research questions**

Looking back at chapter 1, the main research questions were formulated as:

#### ***To what extent is a private waste recovery system active in Bacolod City, The Philippines?***

Several subquestions were constructed to make the main question more concrete for research.

1. *Which actors are involved in the private waste recovery sector?*
2. *How are these actors characterized?*
3. *How are these actors interacting with each other? What are the characteristics of 'the system' of the private sector, i.e. how does the system operate? Which relationships exist between different actors?*
4. *What is the position of the municipal government in this system? Are any policies (national or local) affecting the operations private waste recovery sector? If so, which policies, and to what extent are the different actors affected?*
5. *To what extent is intersectoral cooperation practiced (between municipal government, private sector, CBOs/ NGOs) in solid waste recovery activities?*
6. *What are strengths, weaknesses, opportunities and threats for the different private waste recovery actors in Bacolod City?*

Based on the findings represented in chapter four and five, these questions are answered below:

## 1. Which actors are involved in the private waste recovery sector?

Several actors in Bacolod are engaged in solid waste recovery. Distinction is made between primary and secondary waste recovery, as described in chapter four. This boundary more or less equals the line between the formal and informal sector. The primary recovery sector is identified here as the people who segregate the waste after it has been discarded by the waste generators, which leaves individual recovery actions (households, commercial establishments and institutions) outside consideration.

The primary recovery sector includes: runners and street pickers, municipal workers, and street pickers who work at the city dump site. These activities all take place in the informal sector, no official registrations are made on quantities of materials or on generated income.

The secondary recovery sector thrives on the activities of the primary recovery sector. In Bacolod these are middlemen working on the cities dump site, junkshops and port outlets. The establishments create profit through the trading of the recovered waste materials. Although some of the activities are informal (middlemen and some of the junkshops), the actions are predominantly of a formal nature.

Another actor of importance is the municipal government. Although not directly linked to waste recovery, at least not officially, they do have a certain influence on the recovery actors.

## 2. How are these actors characterized?

### **Primary recovery**

*Runners / street pickers* These two groups are handled simultaneously because many go door-to-door to buy waste materials from households or commercial establishments but also pick waste from garbage bins or waste scattered in the streets. As a result, a clear line between both groups is hard to draw. These people go around the city, on a fixed route or randomly, to collect materials which are valuable to them. These include bottles, several types of metals, papers, carton and plastics. In many cases, pushcarts or Trici Cad are used to collect more and to have a larger action radius. Some own a cart, others lend or hire it from a junkshop.

Some go door-to-door, others delve through waste bins, others practice both activities. At the end of the working day, the materials are brought to a junkshop where they are sold. The runners and street pickers are predominantly male, several children (aged under 18) are active as street pickers. Many runners and street pickers have alternative income generating activities, often using their equipment (Trici-cad). The major source of materials is formed by households, but waste collected from the street is also important for many runners and street pickers. Some prefer to collect materials in the downtown area, while others rather visit remote barangays to avoid competition with other runners. Competition is fierce according to the respondents.

*Municipal workers* These people seem to play a minor role in the waste recovery sector. It should be stated that their primary task is to collect and transport waste, and often there's limited time available to screen the materials. Metals are mostly recovered.

*Waste pickers* Around 210 waste pickers are actively engaged in waste segregation at the municipal dump site. These people form the final step of primary waste recovery, picking materials from the dumped waste. The waste pickers include people from both sexes, male being represented more. A motivation for becoming a waste picker is often that they have no other choice to create income. Others, however, choose to exploit waste materials because

they like to work independently (without a supervisor) or they claim to achieve a higher income with this profession compared to previous jobs. The statement that waste picking is a response to fundamental poverty is only partially true for the waste pickers at the dump site. The weekly income of the majority of waste pickers has decreased compared to one or two years ago. Some have other jobs besides waste picking. Important materials being recovered in terms of kilograms are plastics, cartons and special metals. Plastics and cartons yield a much lesser profit compared to metals. Clearly, waste pickers recover inferior waste materials in terms of price per kilogram. The superior materials are already recovered by other actors.

For the majority of the waste pickers, elementary school level was the highest educational level attained. However, most of the children working at the dump site still go to school, which is perceived by the waste pickers as very important. It is hard to make statements whether the waste pickers come from rural areas, as suggested by the international literature. The waste pickers do not belong to an ethnic minority, which is the case in several other developing countries.

An association was founded to create a legal existence for the waste pickers and to have a voice as a group. Also, a cooperative was established to increase the income of the members, because middlemen will be bypassed in the trading structure. The outcome of the cooperative was not yet known during the time of research.

### **Secondary recovery**

*Middlemen* These people form the mediating actor between the waste pickers and the junkshops. The middlemen buy waste materials from waste pickers, usually arrange transportation (hired or borrowed from a junkshop). Although their number is limited (around five or six individuals), their impact on the livelihood of the waste pickers seems enormous.

*Junkshops* The junkshop is an establishment which buys and sells several types of materials, including recovered waste materials such as plastic bottles, glass, all types of metals, cartons, paper, etc. Some of the junkshops are specialized in one particular material, such as carton, while others buy and sell all materials. In some cases, the materials are processed so that a higher price can be attained. Processing techniques include: cleaning, sorting, packaging, cutting, shredding and compressing.

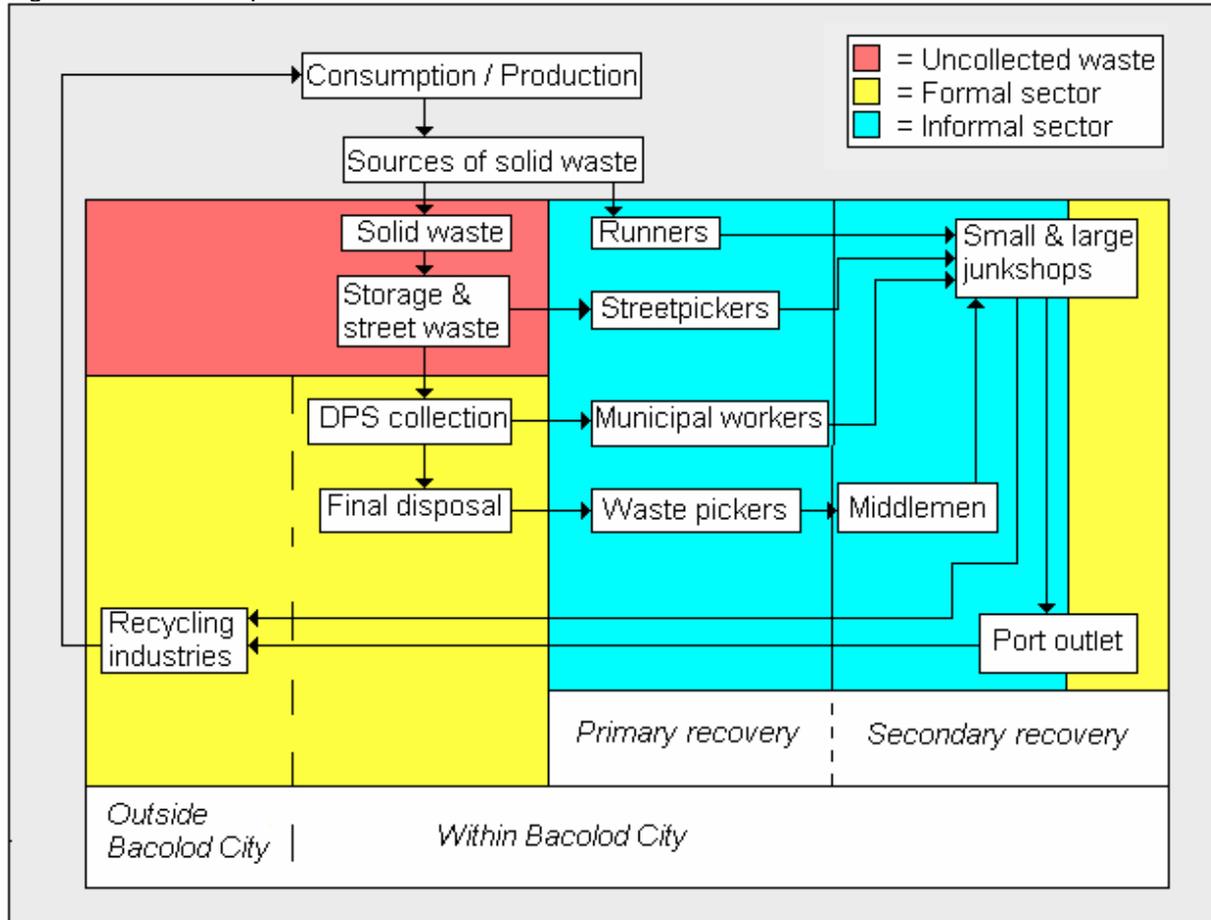
The group of junkshops is not homogeneous. A distinction is made between large- and small-scale. No sharp boundary can be drawn between these two types. The distinction is based on the position of the junkshop within the trading system (i.e. is the junkshop trading to other larger junkshops or directly to recycling industries), on capital intensive investment made in the shop, such as processing equipment or transportation facilities, and on the amount of employees. Two junkshop cooperatives exist in Bacolod, one is still operational while the other is banned unofficially. The first only deals with the trading of glass bottles, five major junkshops of Bacolod are the only members.

*Port Outlet* Two port outlets exist in Bacolod, enterprises which stock scrap iron and other metals. The materials are shipped to national and international destinations around three times a year.

3. *How are these actors interacting with each other? What are the characteristics of 'the system' of the private sector, i.e. how does the system operate? Which relationships exist between different actors?*

When the different actors are interconnected according to trading relations, the following structure can be composed:

Figure 6.1 Structure private sector in the waste flow



The arrows in the figure represent the waste or material flow from one actor to another. First, primary recovery activities take place. Runners retrieve materials from households and other sources of solid waste. When the waste is waiting for collection, street pickers delve the trashcans for valuables. These people also recover materials lying scattered around the streets or other places. Municipal workers who collect materials to dispose the waste at the dump site screen the waste for metals and plastics, usually with haste. When the waste reaches the dump site, many waste pickers are waiting to go through the refuse for a final time.

Then, the secondary recovery activities come into action. Junkshops buy the waste recovered by the runners and street pickers and municipal workers. Middlemen buy materials from the waste pickers at the dump site, who in turn sell it to a junkshop. The junkshops sell the materials to one of the two port outlets at the cities harbor, or transport it directly to (inter)national recycling industries. The port outlets ship the materials to international destinations around three times a year. The recycling industries transform the resources into new products and the cycle winds up again.

The blue section covers the informal sector, while the yellow parts reflect the formal economic activities. The small and large junkshops and the port outlet are located in the blue and the yellow section to indicate that these activities are formal and informal of nature.

It can be stated that the structure of the private recovery sector does not show major differences with the theoretical model presented in chapter one.

Some of these actors are having no or little relation with each other. The following relationships represented in the system were discussed in this research: waste picker – middlemen and runners/street pickers – junkshops.

The waste picker – middlemen relation signifies a high degree of dependency of waste pickers towards the middlemen. The middlemen usually offer low prices as the waste pickers are in no position to negotiate. On the other hand, middlemen do provide financial assistance through loans when credit is required for food, medical attention or other needs. Sometimes the middlemen pay for a breakfast or lunch on demand of the waste picker, instead of providing credit. The saying ‘the knife cuts on both sides’ seems applicable for this case; on the one hand the middlemen provide the waste pickers with credit and help, but on the other hand the waste pickers are highly dependent on the middlemen.

Literature concerning waste recovery claims that a relation between itinerant waste buyers / street pickers and junkshops is often based on mutual trust. To test if this is the case in Bacolod, three questions were asked, linking support gained from junkshops (in the form of advanced credit, equipment or food), to whether or not the respondents would deliver materials to another junkshop if higher prices would be offered at those places. From the data it appears that the runners and street pickers will usually not change junkshop when higher prices are offered elsewhere, whether equipment is borrowed or not. The same is the case whether they receive advanced capital or not. Many runners and street pickers deliver to one junkshop only. Runners and street pickers who deliver to multiple junkshops are believed to give up delivering to a secondary or tertiary junkshop (being less important in terms of income) much easier. However, this statement is based on a limited number of cases. More runners and street pickers should be questioned to support this hypothesis.

4. *Are any solid waste policies (national or local) affecting the operations private waste recovery sector? If so, which policies, and to what extent are the different actors affected? What is the position of the municipal government in the private waste recovery system?*

In the year 2000, a new solid waste management policy came into effect on national level: Republic Act 9003, also known as the ‘Ecological solid waste management act of 200’. The city of Bacolod set up an ordinance that complies with the guidelines set in the Republic Act. The most fundamental changes that will take place are the partial shifting responsibilities from city level towards local government units (LGUs, barangay level). Households should segregate waste according to three categories: biodegradable, recyclable and non-recyclable. The city government will be responsible to collect the non-recyclables only, while the barangay will be imposed to collect the recyclables and the biodegradables. The recyclables should be sold to junkshops while the organics should be used to create compost. This way, the amount of waste materials ending up at the dump site will be reduced to a great extent, as a large amount of the waste is composed by organics. Also, the waste materials are used to create income or livelihood opportunities.

Three pilot projects were initiated by the municipal government and barangay officials to test the policy on community level. The three barangays, Estefania, Handuman and Vista Alegre started the projects according to own vision and objectives, resulting in different implementation methods. A Material Recovery Facility (MRF) was established in Vista Alegre and Handumanan to collect and store the recyclable materials. Handumanan also practiced composting, and used the humus to fertilize a communal garden. Education campaigns were held in all barangays and schools to increase the awareness of waste related problems and to inform the households about the projects. Major problems were identified by the barangay officials as lack of frequent funding and unwillingness of households to segregate waste according to the three categories. In rural barangay Vista Alegre the lack of segregation was not considered to be a problem as traditional rural consumption patterns resulted in low waste production. A possible outcome of the unwillingness (or perhaps the unawareness) of

the households to segregate their waste could be that the MRF in the two barangays (Estefania did not have one yet) is not operating as planned, meaning that no or little income is generated.

General waste related issues identified by all barangays is that the DPS waste collection service often struggles to collect waste in all municipal barangays. Also, illegal waste disposal was widely practiced.

It becomes clear that waste behavior can not be changed overnight. Waste segregation and 'proper' waste disposal are being enforced on a community that has been burning, burying, or dumping waste ever before. The finding that these activities still occur abundantly indicates that more time is necessary to change these customary patterns.

However, when the concept of the projects will be implemented on full-scale, meaning on all barangays in the city, and segregation is practiced by a majority of the households, one can question what the effects will be on those whose livelihood heavily depends on waste recovery. All valuable materials are withdrawn from the waste flow. The waste pickers, runners and street pickers will see their income drop subsequently.

On the other hand, the informal sector can operate on lower costs, and is therefore able to offer a higher price for certain materials. As shown earlier in Manila, a competition between a governmental institution (e.g. municipal government) and the informal sector is often won by the sector operating on the lowest costs.

Although brought forward by an Australian researcher in service of the municipal government (and not the municipal government itself), some statements were made about the outcome of full scale implementation for the waste pickers at the dump site. Suggestions were made for barangays to hire people who currently work at the dump site, in order to provide an alternative livelihood.

The future will show whether the operations of the informal recovery actors (waste and street pickers, runners) will be endangered by the new solid waste management policy or not.

To examine the position of the municipal government within the system described above (see figure 6.1), the following relations between the city officials and private sector actors were studied: municipal government – waste picker and municipal government – junkshop.

The municipal government provides limited support for the waste pickers. First, waste picking activities are identified as legal, although for a restricted group. Non-members of the waste picking association are not allowed on the city dumpsite, and at the moment of research no new members were signed in. This way, city hall can control the amount of waste pickers, although illegal waste picking is happening to a small extent. Rules for waste picking are set up by the association and the municipal government, but these are frequently offended.

From these statements made above, it can be confirmed that the municipal government does recognize the waste pickers as a group. However, the group is hardly recognized in the official policies concerning solid waste management. An exception is a draft of the solid waste management plan, set up by an Australian researcher. How this concept will work out for the waste pickers in the future is unknown. Considering the theoretic model presented in chapter one, four types of attitudes of governments towards waste pickers were suggested: repression, neglect, collusion, and stimulation. For Bacolod it seems that an attitude of neglect towards waste pickers is the case. However, it should be noted that some financial help is provided to set up a waste picker cooperative. Perhaps the attitude of neglect will gradually shift towards in an attitude of stimulation in the future.

Although junkshops are recognized by the municipal government as potential waste dealer, no support is given to this sector in particular, at least not yet. A representative of a junkshops should be present in a barangay solid waste management committee, the institution which will arrange waste management issues on barangay level. The representative and the barangay officials should make agreements on the prices of the materials.

5. *To what extent is intersectoral cooperation practiced (between municipal government, private sector, CBOs/ NGOs) in solid waste recovery activities?*

Intersectoral cooperation is here referred to as several sectors working together to achieve certain collective objectives, such as sustainable solid waste management, increasing livelihood opportunities, a clean and healthy environment, increasing profits, etc. The sectors are: municipal or local government, the private sector engaged in waste recovery, and the civil society concerned with waste related issues, such as Non-Governmental Organizations (NGOs) and Community Based Organizations (CBOs). The international literature concerned with solid waste management has formulated intersectoral cooperation as a next step towards a more efficient and sustainable way of practicing solid waste management.

During the time of research, one NGO was known to be involved in waste management. The project in barangay 7 described in chapter five was the outcome. Besides that the materials stored in the MRF are sold to a junkshop, the private sector was only hardly involved in this project. However, strong ties were laid between the NGO and local government officials of barangay 7. Both parties aimed at the same goals; to promote segregation at the source, to create awareness of waste related issues, and to exploit waste materials in order to create livelihood opportunities.

Relationships between the private sector and the municipal government were already identified as one-way: the government does recognize the private sector in the sense that junkshops should buy materials from barangays. Informal actors are acknowledged to a far lesser extent. However, the city government does not provide the junkshops with any support. Little dialogue exists between the junkshops and the municipal government, which is necessary for sectoral cooperation. While a representative from the Bacolod Junkers Multi Purpose Cooperative is included in the solid waste management board (committee on city level which constructs solid waste management related plans), the Cooperative is no longer active, at least according to the president at the time of research.

The hypothetical model of Nas and Jaffe presented in chapter one merged several characteristics of the waste picking system in one table, constructing a new variable; 'the success factor'. The variable signifies the chance of a waste picking system to become successfully integrated in the formal waste management system. The table is represented below:

Table 6.1 Interaction of characteristics of waste picking systems

	Level of organization			Socio-Political Context				Socio-Cultural differentiation		Advanced technology		Success factor
	Low	Med	High	1	2	3	4	Ethnic	Status	Appropriate	Inappropriate	
A			X				X		X		X	++
B			X			X		X	X		X	+
C		X			X				X	X		-
D	X			X				X	X	X		--

Social-Political context: 1: Repression, 2: Neglect, 3: Collusion, 4: Stimulation

Source: Nas and Jaffe, 2000

For the case of Bacolod City, the level of organization can be interpreted as medium, as an association and cooperative have been established, but is not functioning very effectively, at least not yet. The socio-political context has already been identified as an attitude of neglect (however with some tendencies towards stimulation). The waste pickers in Bacolod are considered not to be part of an ethnic minority. Advanced technology such as compactor

trucks and open dump trucks are used by the Department of Public Services to collect waste materials. When these characteristics are put in the table, it appears that case 'C' is applicable for Bacolod City. The success factor for integration scores a minus according to this model.

Concluding, intersectoral cooperation is clearly not the case, and few efforts have been made by the municipal government to integrate several actors into one system.

6. *What are strengths, weaknesses, opportunities and threats for the different primary waste recovery actors in Bacolod City?*

Several aspects of the private waste recovery sector in the present day as well as the future are categorized in a SWOT-analysis.<sup>15</sup> Their strengths, weaknesses, opportunities and threats as interpreted in this research are represented in the three tables below. It should be stated that this instrument of analysis can be understood in various ways: often an ability of strength could in other cases also be read as a weakness.

The SWOT positions an actor in the present day but also in the future. It assumed that several observed trends will continue: Bacolods population will keep on growing; waste production per household will increase as economic growth takes place; the Republic Act 9003 will be fully implemented on barangay level in the near future; more opportunities will be created to recycle waste different types of materials.

First, the two major primary recovery actors studied in this research are waste pickers at the dumpsite, and runners and street pickers. Features are represented for a group, although differences within a group exist. Also, two groups share certain characteristics. It is therefore possible to compare the two groups within the SWOT analysis. This means that the strengths, weaknesses, opportunities and threats are relative to the other group.

Table 6.2 Waste Pickers

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>- Organized in association</li> <li>- Legal existence</li> <li>- Social network</li> </ul>	<ul style="list-style-type: none"> <li>- Dependent on middlemen</li> <li>- Dangerous and unhealthy working conditions</li> <li>- Negotiating power is limited</li> <li>- Limited access to superior materials</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>- Establish cooperative to increase income and establish safety net</li> <li>- Adaptation within formal solid waste management on barangay level</li> </ul>	<ul style="list-style-type: none"> <li>- Segregation at households level, recover activities on barangay level, and the recovery by the DPS could decrease the amount of valuable materials ending up on the dumpsite, threatening the income of the waste pickers</li> <li>- More and more people recognize the value of waste and will sell the materials individually</li> </ul>

<sup>15</sup> SWOT is an abbreviation for Strengths, Weaknesses, Opportunities and Threats.

Table 6.3 Runners and street pickers

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>- Highly flexible and adapted to local demands</li> <li>- Independent compared to waste pickers</li> <li>- Other income generating activities</li> <li>- First access to materials</li> <li>- Higher income</li> </ul>	<ul style="list-style-type: none"> <li>- Unorganized in activities</li> <li>- Negatively perceived by the public, accused of robbery</li> <li>- High competition among runners and street pickers</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>- Set up group or cooperative where uniforms and identification cards are used (as in Manila)</li> <li>- As the city of Bacolod keeps on growing, more materials enter the waste flow and more techniques arise to recycle certain materials. This could result in more materials to recover</li> </ul>	<ul style="list-style-type: none"> <li>- Denied access to households by barangay officials and segregation at the source</li> </ul>

Runners and street pickers generally generate higher income than waste pickers at the dumpsite. Also, runners and street pickers tend to have other jobs besides recovering materials. A possible explanation for the differences in income is that the runners and street pickers have the ‘first pick’ in the materials, recovering those materials which yield the highest profit. Another probable reason is that waste pickers at the dump site sell their waste to middlemen, who offer lower prices than junkshops.

Working conditions are also not the same. While it can be stated that the conditions of runners and street pickers are tough, especially during the wet season, they are much better off than the waste pickers on the dump site, where the odor of rotten organics dominates and where diseases are believed to be present wide spread. However, the waste pickers are organized while the runners and street pickers are not.

Summarizing, a major difference exists in the factor ‘vulnerability’. Waste pickers are much more financially vulnerable because of the presence of middlemen, and are being exposed to more dangerous and unhealthy working conditions.

However, these groups should not be identified as groups that have fallen victim to local conditions. Both actors are perceived as enduring, able to cope with rough circumstances and creative in constructing a livelihood.

Another important actor studied in this research is formed by the junkshops. The group of junkshops, although not sharing uniform characteristics, has established themselves fundamentally in the urban economy of Bacolod. The newly implemented policy for solid waste management builds on the presence of junkshops, as they should buy the materials segregated and stored by the barangay. How this development will affect the operations and income of the junkshop remains speculative: are the junkshops able to stock and transfer more materials when a majority of the generated waste is separated at the source? Perhaps the municipality will start a large public operated junkshop to create more earnings.

When all these subquestions are answered, it can be stated that a private waste recovery system is active in Bacolod to a great extent. Several actors are involved directly and indirectly within the system, with various relationships holding the system together. However, as little is known about systems in other cities within or outside the Philippines, no comparisons can be made here.

## **6.2 Other notes**

All described activities embody the term ‘resource recognition’ described in chapter one. More and more people becoming increasingly aware of the value of waste materials, looking at the private recovery activities in Bacolod and at the national and municipal policy on solid

waste management as well. The concept of 'waste' has changed subsequently and will change further in the future when the people are educated about the value of used materials. What is perceived as waste by one (the one discarding), is identified as a resource by another (the one recovering, re-using, composting and recycling). Taking all described activities in mind, it could be stated that already a conflict over waste has begun, as several actors are striving for a piece of the cake. People who retrieve waste for to sustain a livelihood, municipal and barangay governments, and perhaps even households in the near future.

An observation that deserves to be discussed here is the attitude of the municipal government towards several actors. Although perhaps the municipal government shows neglect towards the informal sector, it should be made clear that the city of Bacolod is quite up to date on new paradigms of solid waste management, and is open for discussion concerning new developments.<sup>16</sup> The new solid waste management act reflects these visions; decentralization of responsibilities, including the private sector in execution; adhere to sustainable developments. Although the policy does not provide conclusive definitions on these terms, at least these concepts are discussed and considered. And that is a very positive development.

### **6.3 Recommendations on future research**

During the research many other questions arose concerning the topics. At first, the research also included the studying of small-scale recycling and composting in Bacolod. Because of the intensity of the recovery sector in Bacolod, the choice was made not to study these activities. It would make the research too broad, while research time was limited. These activities are however interesting to study in the future. Another interesting topic which took interest during the research is the concept of 'urban agriculture'. Although not directly related to waste recovery, organic waste materials are being retrieved for use as an inexpensive fertilizer. The production of crops and vegetables on small gardens, balconies and roof tops is a highly interesting topic, already gained much attention in the literature concerned with development issues.

It would also be interesting to perform a similar research in Bacolod within five or ten years to examine the outcome of the policy and whether or not the private recovery sector has changed and how the waste picker cooperative is operating.

The Australian researcher Schliebs suggested to use waste pickers for barangay solid waste management activities. Their livelihood will be threatened by the implementation of the policy and the knowledge of the waste pickers can be used for recovery on barangay level. If the waste pickers are willing, I support this idea to the fullest.

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<sup>16</sup> Schutte discussed this feature in his thesis in 1997

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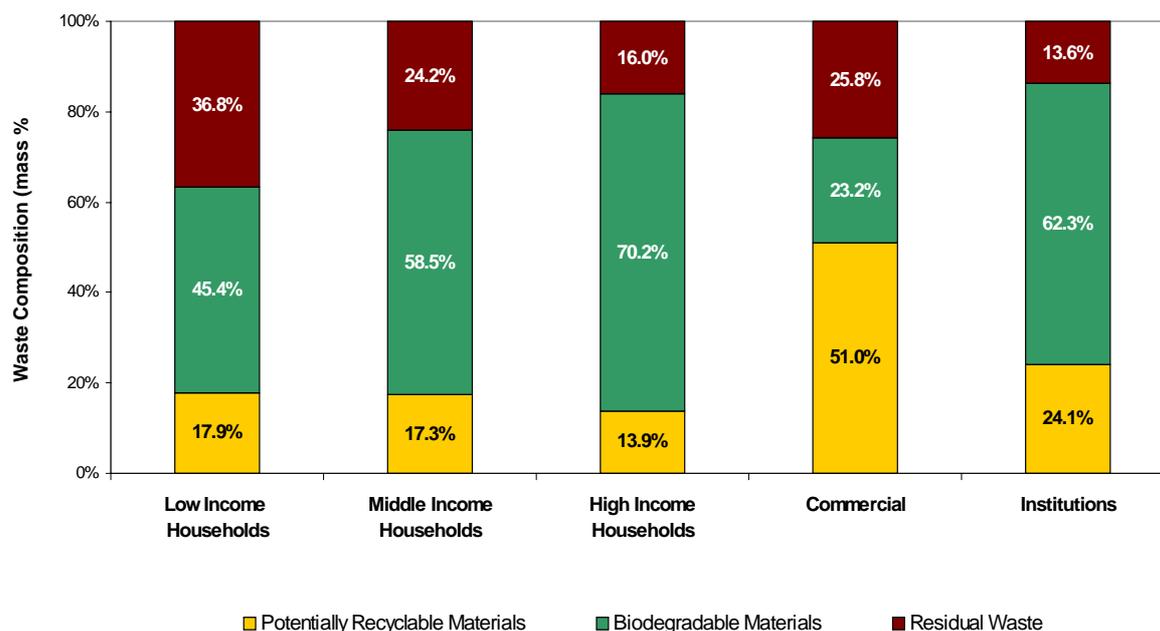
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## Appendix A: Average waste composition among various waste producers in Bacolod



Source: Schliebs, 2003

## Appendix B: Outcomes statistical analysis waste pickers

Average income per waste picker per week \* Amount of years in waste picking

		Amount of years in waste picking					Total
		Less than 1 year	2 - 5 years	6 - 10 years	11- 20 years	More than 20 years	
Average income per waste picker per week	0 - 250	1	6	4	2	2	15
	251 - 500	1		4	3	0	8
	> 500	1	5	0	1	0	7
Total		3	11	8	6	2	30

Average income per waste picker per week \* Do you live on the dumpsite?

		Do you live on the dumpsite?		Total
		Yes	No	
Average income per waste picker per week	0 - 250	4	11	15
	251 - 500	0	8	8
	> 500	1	6	7
Total		5	25	30

Average income per waste picker per week \* Other income besides waste picking?

		Other income besides waste picking?		Total
		Yes	No	
Average income per waste picker per week	0 - 250	5	10	15
	251 - 500	2	6	8
	> 500	4	3	7
Total		11	19	30

Average income per waste picker per week \* Why did you become a waste picker?

		Why did you become a waste picker?					Total
		because family/friend were involved	No other options	No supervisor	Relatively high income	Other	
Average income per waste picker per week	0 - 250	1	6	3	3	2	15
	251 - 500		5	1	1	1	8
	> 500	2	2	1	1	1	7
Total		3	13	5	5	4	30

## Appendix C: Questionnaire Runners and Street Pickers

**Questionnaire for Runners / street pickers - The information acquired will be handled confidentially**

Date \_\_\_ / \_\_\_ / \_\_\_ Respondent# \_\_\_\_\_ Name \_\_\_\_\_

Age	Sex	Civil Status	Educational attainment

Sex: Male=1, Female = 2 - Civilian Status: 1=Single, 2= Married, 3=Widowed - Education code: 1-Elem. Level, 2-Elem. Grad, 3-High School Level, 4-High School Grad, 5-College level, 6-College Grad, 7-Vocations

- 1) Do you originally come from Bacolod?  
 1-Yes, 2-No: If 2, please specify \_\_\_\_\_
- 2) How long have you been doing this job?  
 1 = Less than 1 year, 2 = 1 - 5 years, 3 = 5 - 10 years, 4 = 10 - 20 years, 5 = More than 20 years
- 3) What made you become a runner? \_\_\_\_\_
- 4) Do you have other forms of income besides collecting materials?  
 1-Yes, 2-No: If 2, continue to question 6
- 5) With what kind of other income generating activities are you (respondent) involved?  
 Activity #1 \_\_\_\_\_  
 Activity #2 \_\_\_\_\_

6) As a runner / street picker, how much time do you usually spend on a working day?  
 # Hrs \_\_\_\_\_ start at \_\_\_\_\_ finish at \_\_\_\_\_

7) How many days a week do you work as a runner / waste picker?

8) Where do you acquire the materials?  
 Households  Businesses  Trashcans  
 Other, specify \_\_\_\_\_

9) Out of the materials you collect, which generates the most income?  
 1-Plastic bottles, 2-Other plastics, 3-Cartons, 4-Scrap Iron, 5-Special Metals, 6-Paper, 7- Glass Bottles, 8-Other, specify \_\_\_\_\_

10) May I ask you what your average income is per time unit?

Day	Week	Month

11) Are you satisfied with your income?

1-Yes, 2-No

12) Compared to 1 to 2 years ago, has your income decreased, is it the same, or has it increased?

1-decreased, 2-same, 3-increased

13) Does the seasonality influence your collecting activities?

1-Yes, 2-No: If 1 please specify \_\_\_\_\_

14) In which part of the city do you usually collect waste?

*Draw on map*

15) To which Junkshop do you usually sell your materials?

Junkshop 1 \_\_\_\_\_  
 Junkshop 2 \_\_\_\_\_  
 Junkshop 3 \_\_\_\_\_

16) Does the Junkshop advance money to you?

Junkshop 1  Junkshop 2  Junkshop 3  1-Yes, 2-No

17) Does the Junkshop provide you equipment?

Junkshop 1  Junkshop 2  Junkshop 3  1-Yes, 2-No

18) Will you change selling to a particular junkshop when you can get a higher price elsewhere?

Junkshop 1  Junkshop 2  Junkshop 3  1-Yes, 2-No

19) In your opinion, what are the major problems you encountered during your activities? (3)

Problem	How do you address the problem?

20) Do you have any plans for the near future regarding your job?

Plans: 1-continue job, 2-Find other job, 3-continue this job until other opportunity comes, 4-find other income generating activities besides collecting waste, 5-other, please specify \_\_\_\_\_

Comment \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Thank you for this interview!!!

**Appendix D: Questionnaire waste pickers on the dump site**

**Questionnaire for Waste Pickers - The information acquired will be handled confidentially**

Date \_\_\_/\_\_\_/\_\_\_ Respondent # \_\_\_\_\_ Name \_\_\_\_\_

**About the household**

Name	Age	Sex	Civil Status	Educational attainment	In/out school	Occupation
1. Respondent						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

Sex: Male=1, Female = 2 - Civilian Status: 1=Single, 2= Married, 3=Widowed - Education code: 1-Elem. Level, 2-Elem. Grad, 3-High School Level, 4-High School Grad, 5-College level, 6-College Grad, 7-Vocations – School: In-1, Out-2 – Occupation: 1-Waste Picking, 2-Other

1) Do you originally come from Bacolod?  
 1-Yes, 2-No: If 2, please specify \_\_\_\_\_

2) What made you become a waste picker?  
 Family members are involved in waste picking activities  
 Friends are involved in waste picking activities  
 It's the only job I know / no other options  
 It's easy because there's no boss  
 Other, please specify \_\_\_\_\_

3) Do you live on the dumpsite?  
 1-Yes, 2-No: If 2, please specify \_\_\_\_\_

4) How long have you been doing this job? / When did you start working as a waste picker?  
 Less than 1 year     1 - 5 years     5 – 10 years  
 10 – 20 years     More than 20 years

5) Do you have other forms of income besides waste picking?  
 1-Yes, 2-No: If 2, continue to question 7

6) What kind of other income generating activities are you (respondent) are you involved in?  
 Activity #1 \_\_\_\_\_  
 Activity #2 \_\_\_\_\_

**The next question will focus on the waste recovery and the working conditions**

7) How much time do you usually spend on a working day on the dumpsite?  
 # Hrs \_\_\_\_\_ start at \_\_\_\_\_ finish at \_\_\_\_\_

- 8) Are you satisfied with the amount of the materials you recover daily?  
 1-Yes, 2-No
- 9) Out of the materials you recover, which one has the largest volume (in kg)?  
 1-Plastics, 2-Cartons, 3-Scrap Iron, 4-Special Metals, 5-Paper, 6 Glass Bottles, 7-Other, specify \_\_\_\_\_
- 10) Does the seasonality influence your waste picking activities?  
 1-Yes, 2-No: If 1 please specify \_\_\_\_\_
- 11) May I ask you what your average income is per time unit?
- | Day | Week | Month |
|-----|------|-------|
|     |      |       |
- 12) Compared to 1 to 2 years ago, has your income decreased, is it the same, or has it increased?  
 1-decreased, 2-same, 3-increased
- 13) Do you wear protective clothing or equipment during your activities?  
 1-Yes, 2-No
- 14) Do you encounter any conflicts with other waste pickers during collection activity?  
 1-Yes, 2-No, If 1: Specify conflict \_\_\_\_\_

**About the business contacts**

- 15) Do you sell your materials individually/household or in a collective group?  
 1-Individually/household, 2-Collective, 3-Both
- 16) To who are the materials sold?  
 1-Middlemen, 2-Junkshops, 3-Other, please specify \_\_\_\_\_
- 17) Do you have a contract with the junkshops or middlemen?  
 1-Yes, 2-No

**About the Bacolod Scavengers Association**

- 18) In your opinion, is it easy or difficult to become a member of the Bacolod Scavengers organization?  
 1-Easy, 2-Difficult
- 19) As a member, what are the benefits the organization can provide you?  
 Higher income                       More human rights    Better working conditions  
 Other, \_\_\_\_\_

**About supportive networks**

- 20) Do you receive any help from the city government?  
 1-Yes, 2-No: If 1 specify department \_\_\_\_\_
- 21) Do you receive any help from Non-governmental Organizations (NGOs)?  
 1-Yes, 2-No: If 1 specify organization \_\_\_\_\_

**About problems with the job**

22) In your opinion, what are the major problems you encountered during your activities? (3)

Problem	How do you address the problem?

**About the future**

23) Do you have any plans for the near future regarding waste picking?

Plans: 1-continue waste picking, 2-quit waste-picking, 3-find other income generating activities besides waste picking, 4-haven't thought about the future, 5-other, please specify\_\_\_\_\_

Comment\_\_\_\_\_

\_\_\_\_\_

Thank you for this interview!!!

**Appendix E: Guidelines for interview with junkshop operator**

**Guidelines for interview the Junkshop operators**

The data acquired will be handled confidentially

Junkshop\_\_\_\_\_ Visited on \_\_\_/\_\_\_/\_\_\_\_\_

Name Respondent\_\_\_\_\_

Function Respondent\_\_\_\_\_

**About the Junkshop**

1) Where is the junkshop located?

Street\_\_\_\_\_

Purok\_\_\_\_\_

Barangay\_\_\_\_\_

2) When was the shop established?

Year, \_\_\_\_\_

3) At the moment, how many people work in the shop on a regular basis?

Number, \_\_\_\_\_

4) At the moment, how many people work in the shop on a non-regular basis?

Number

5) What kind of materials do you buy and sell?

See attachment

6) What, measured in percentage of gross income, is the most important material for the junkshops business?

Name material, \_\_\_\_\_

7) What is the shops annual gross income?

Peso, \_\_\_\_\_

8) What is the shops annual net income?

Peso, \_\_\_\_\_

**About the business and business networks**

9) From who or where do you acquire the materials?

- From households
- From businesses
- From the dumpsite
- From Barangay communities
- Other, namely...

10) Who are transporting the materials to the shop?

- Runners contracted by the junkshop
- Runners who work individually
- Households bring it themselves
- Businesses bring it themselves
- The shop collects the materials
- Department of Public Services
- Other, namely...

11) Does the shop have any equipment or facilities that are used for processing and or packaging of waste?

- Yes
- No >> proceed to question 13

12) What kind of equipment or facilities does the shop have?

- Compressing
- Melting
- Cutting
- Shredding
- Cleaning
- Packaging
- Other, \_\_\_\_\_

13) Who are the buyers of the materials?

- Small scale recyclers
- Big recycling industries
- Other junkshops
- Middle dealers
- Outlet at port
- Other, \_\_\_\_\_

14) Are these buyers answered in question 13 located in Bacolod? Cross if so.

- Small scale recyclers
- Big recycling industries
- Other junkshops
- Middle dealers
- Outlet at port
- Other, namely...

15) Does the seasonality (dry/wet season) influence your business?

- Yes
- No >> proceed to question 17

16) In what ways is the business influenced by seasonality?

\_\_\_\_\_

#### **About the workers in the Junkshop**

17) Are any junkshop workers housed on the junkshop area?

- Yes
- No

18) Does the junkshop provide any help to the junkshop workers?

- Yes

No >> proceed to question 18

19) What kind of help is the Junkshop providing to the workers?

- Food
- Financial help
- Education
- Housing
- Electricity
- Water
- Other, \_\_\_\_\_

**About the Ecological Solid Waste Management Act and the City Government**

20) Are you aware of the contents of the Ecological Solid Waste Management Act, also known as Republic Act 9003

- Yes
- No

21) What is your opinion about the Ecological Solid Waste Management Act?

- Negative
- Neutral
- Positive

**About the organizations / associations involved in junkshops activities**

22) Are you a member of any organizations related to junkshop activities

- Yes, please specify the organization \_\_\_\_\_
- No, proceed to question 24

23) Are you active in these organizations?

- Yes, please specify position \_\_\_\_\_
- No

**About the future**

24) Do you have any plans for the near future (less than 5 years)

- Yes, please specify \_\_\_\_\_
- No

25) What are your needs to achieve your plans for the future?

- Please specify

Comment: \_\_\_\_\_  
\_\_\_\_\_

Thank you for this interview!!