

Gender-Linked Livelihoods from Modernising the Waste Management and Recycling Sector: a Framework for Analysis and Decision Making

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What this paper is about

This paper asks two basic questions:

1. Does the modernisation of the urban waste sector, especially the development of waste removal and recycling systems, offer opportunities for increased livelihoods? What are the economic characteristics and gender dimensions of those livelihoods?
2. If the goal is to create socially productive, sustainable livelihoods for women (and men), is the urban waste system a good place to look for those livelihoods? What do economic and gender analyses indicate about choosing the path for creating those livelihoods, and how can the insights be placed in service to development.

Some background

WASTE has been working on waste management in poor and disadvantaged communities for a long time. Some of the most active structures in these kind of communities are involved in community clean-up, waste collection, recycling. According to UK's David Wilson, the status of urban waste management can be used as a proxy for the general level of social development of municipalities or communities – it is a good indicator.¹

At WASTE, we turn this insight on its ear: we have found that the development of the urban waste service and recycling sector is a reliable and interesting trigger for development, and that the skills acquired in working on the waste system serve community members well as they move to political, institutional, and economic development.

Waste is often an unclaimed resource

One reason that the urban waste sector can do this is that the resources there – that is the waste materials – are usually unclaimed, in societies where all other sources of resources are already allocated, and/or the commons is no longer available. Women and men who work with waste as waste pickers and waste buyers have identified a resource – waste materials – which is not forbidden to them. This partially explains why it is often the most economically or socially disadvantaged groups which end up extracting valuable materials from the waste stream. These groups may not have houses, nor access to land, nor water rights, but urban waste is available to them.

¹ Whiteman, Andrew, Peter Smith, David Wilson, "Waste Management Indicators: An Indicator of Urban Development", paper presented at CWG conference, Manila 2001

About livelihoods in waste management

We like to begin our paper with a bit of economic analysis about the kinds of livelihoods that we have observed in the urban waste sector, because we will base any future interventions on these forms. We observe that there are two different kinds of economic activities in the urban waste sector, which have quite different economic, gender, and social characteristics.² We have called these Service-based and commodities-based activities. We recognise also a third, values-based activities, but we won't talk much about them here. We give here a short introduction to each.

Service-based waste management

Service-based waste management is related to a payment for a service, and usually this service is removal of waste, litter, latrine sludge, shit. Service-based activities are usually paid by unit of work, that is, by the hour, by the kerb-metre swept, by the household served.



Woman junk buyers having lunch on a sidewalk in Hanoi, Vietnam

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Who pays? In service work, the client for the service is some kind of beneficiary, one who gets the benefit of the service, or usually, one whose waste gets removed or street gets cleaned. Sometimes this legal or natural person has to pay directly for the service themselves, but more often the municipality pays on behalf of its citizen-clients, and they pay through taxes or a general fee.

What do we know about service-based activity?

- ◆ it is usually very badly paid.
- ◆ there are lots of hidden costs which put the enterprise or individual at financial risk.
- ◆ health and safety risks are not compensated.
- ◆ the enterprise is dependent on the municipality or the household for payment, and often this payment does not come on time or in full.

The enterprise is vulnerable to being displaced by the “development” activities of donors or the formal city authorities

² Scheinberg, Anne,

Gender-Linked livelihoods from modernising the waste management and recycling sector
WASTE, Maria Muller, Anne Scheinberg, February 2002.

Service-based waste management and modernisation of urban waste and recycling systems

When we talk about modernising urban waste systems, we are usually talking about introducing or modernising a service relationship when we are discussing:

- ◆ street sweeping
- ◆ residential or commercial waste collection
- ◆ industrial or urban cleaning
- ◆ separate collection of recyclables
- ◆ latrine-emptying or gutter and sewer cleaning

In fact, most of the activities related to environmental protection, urban modernisation and privatisation, and urban upgrading are activities in the urban service sector.

Commodities-based waste management

Commodities-based economic activity is based on trading items or materials for a price. The price is usually paid per kilo or ton, but sometimes also for specific items, like glass bottles or car accumulator batteries. The payment is based entirely on the material value of the item or material – that is, its commodities value. In the case of waste materials, this commodities value is derived from the original value-added of the item being disposed, and the activity of recycling or recovery is based on capturing this residual or retained value.

Prices for commodities are not usually set locally, they are set by the world marketplace, particularly the prices for paper and metals. So the local buyers are “stepping down” from a global price, to allow for the collection, handling, storage and transport of the materials to the nearest or most advantageous buyer.

Commodities-based enterprises and organisations rely on good trading to survive – trading is their “core business”, so in cultures where men do the trading, one may expect to find recyclables traders who are men. In East and West Africa, where women do the trading, one may also expect to find junk shop owners who are women.

Because of this connection to the global commodities trade, even small, very localised commodities-based enterprises are operating in a high risk environment. There is the potential to realise high revenues at the level of junk shop owners and recycling workshops, but there is also high risk of losing. This often results in a situation in which waste pickers or itinerant buyers are contingent labour – without fixed employment, and in addition, with low and uncertain rates of return on their labour.

Commodities-based waste management and the shift to the “integrated waste management paradigm”

Partly as a result of the modernisation of modern waste management policy, waste management tends to undergo a modernisation to what is called “integrated waste management.” This transition is also in process in many South countries like Viet Nam. One of the main characteristics of this shift is the addition of recycling and composting to the generally accepted formal waste management system.

Thinking about modernising the waste and recycling sector

In this paper, we develop and present a framework for analysis of the potential to strengthen or create livelihoods in the waste management sector, particularly as this relates to the modernisation of recycling. This is a conference about gender and waste: we use gender analysis as one of the tools in constructing this framework, but our paper is not only about gender analysis. We also use analysis based on the framework of integrated sustainable waste management (ISWM), using insights based on many years working with the informal waste and recycling sector.

How do we introduce recycling in a sustainable way that creates or strengthens livelihoods of the poor?

The principle question that this paper is designed to answer is this one: how do we introduce recycling that is modern and meets the needs of modern or modernising waste management systems, such as might be found in medium-sized cities here in Viet Nam, without disrupting the informal waste service and recycling activities already going on? How do we improve the livelihoods of the informal sector, and make use of their expertise and experience?

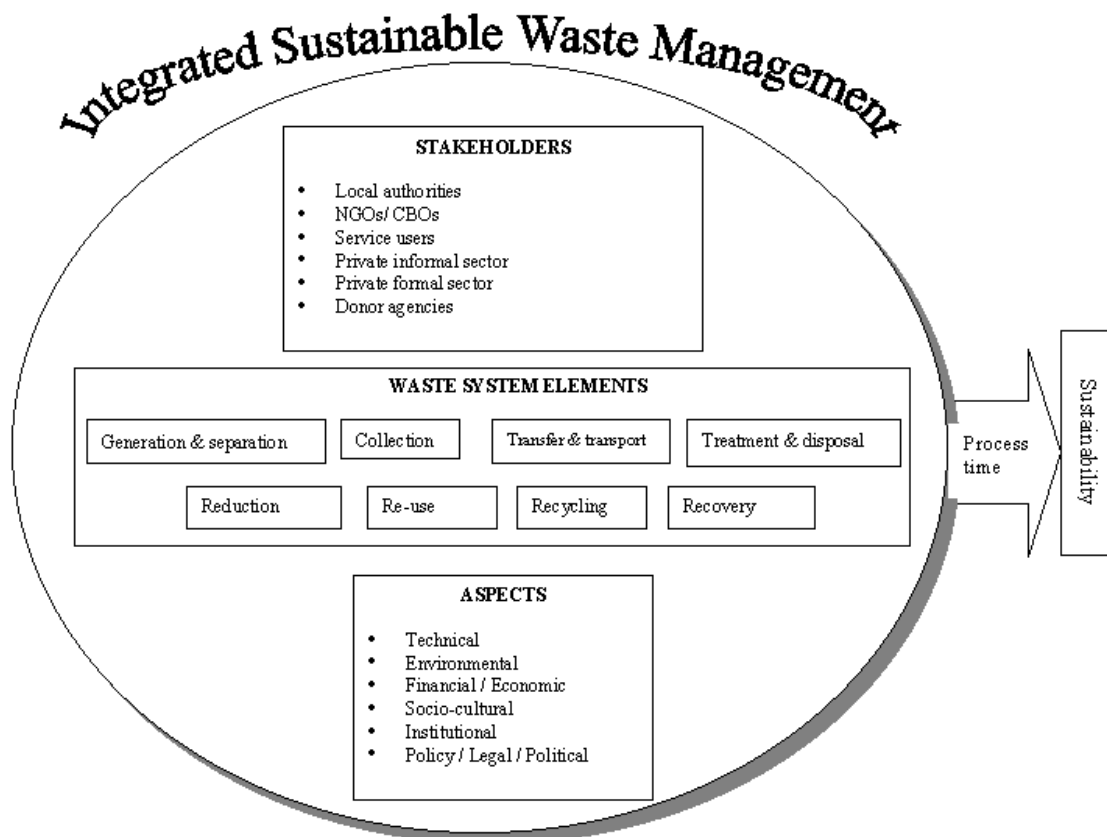


Figure 1. The ISWM model

Gender Analysis and the ISWM approach

The first principle of integrated sustainable waste management: understand the existing system before you intervene.

Following the principles of ISWM, we start the modernisation process by thoroughly analysing the existing situation. We seek out the micro and small enterprises (MSEs)

and individuals who are already earning some or all of their livelihood from waste, and we analyse what they are doing, and attempt to understand its impacts – both good and bad.

- ◆ What kind of activity is happening? Are these MSEs and individuals involved in service-based, or commodities-based activities? This basic observation is then followed by a technical, financial-economic, environmental, socio-cultural, institutional, and policy/legal/politics analysis.
- ◆ We propose in this paper also to include a gender analysis of these waste activities. The purpose of making a gender analysis is to ask how gender relations affect the efficient operation of these waste management activities; and to assess what equal or unequal chances women and men have to improve their livelihood through the modernisation of the waste management sector. Other gender questions will receive little attention in this paper, such as those referring to the affect of waste management activities on the daily lives of women and men; and to the strengthening of women's relative social position in society. We use a questioning style: after asking a number of frequently asked questions about service-based and commodities-based waste activities, we offer observations and examples that make gender influences evident.

Understanding service-based waste activities from a gender perspective.

What is the nature of the service relationship? Specifically, what are the dependency relationships in urban service work?

The MSEs providing waste removal services, depend on their clients for payment. Although in many cities individual households and private offices pay the service charges, it is the local government that determines the amount of charges that MSEs may demand. In that case the MSEs have to deal with several clients on a policy level and on a practical, day to day level in order to keep their enterprise viable. In contrast, the local government becomes a single powerful client when it has a contractual relationship with MSEs to remove household waste or street litter within a defined area, whether a neighbourhood or a stretch of kerb side. In that case, local government has the power to impose the conditions of the contract unless the MSE leaders know the full costs of service operation and are able to negotiate from that position. It is also risky for MSEs to be dependent on only one source of payment.

The gender question is, whether women-led MSEs are in the same position as men-led MSEs to deal with the two types of clients, households and government officers. Do they receive the same moral support, do they have the same training, the same contacts in the government and community networks?

Are the positions at the municipality, especially those in urban waste management, occupied by men or women? And how does this affect the relationship with the MSE as service providers?

One can imagine that women, especially those with low social status, feel uncomfortable to enter men's offices to discuss inadequate contracts or difficulties in

getting payment. To boost self-confidence and safeguard personal security women often prefer to go in a small group.

Easy personal contact between men can lead to a good business contract between parties, as was observed in Dar es Salaam, Tanzania. In 1998 the first contracts for street cleaning were issued to several MSE led by women, and one MSE led by men. Although officially all contractual rates of payment were the same, the men-MSE was able to negotiate a much better contract than the others (personal communication by chair lady of one MSE). Why did the men have this success? Did they have more self-confidence? Did they have better knowledge of the real costs of service delivery and have better negotiating skills? Or was there the shared notion that men's work is 'more important', since men are the sole bread-winners for the family? Obviously this notion is untrue, as women, especially in the lower and middle income groups, contribute a large share of household income.

Does the waste removal service appear to be consistent with traditional roles of men and women? Does it build on - or challenge - socially accepted notions of what women and men should be doing?

In most societies it is considered part of women's domestic role to clean and remove waste from the house, whether it is discarded materials, food leftovers, children's faeces, or litter and dust from the compound. That women should clean the streets in their role as community care taker, appears a 'natural' extension to their domestic role. In some communities women are respected and officially celebrated for their voluntary community work. The other side of the same coin is that women are often not regarded for paid community work, while people refer to the notion 'paid work is men's work'.

A stark example of this attitude comes from a MSE in Ouagadougou. The community leaders insisted that men be hired for the waste collection work, "as women had to stay home and look after the children".³ The men proved to be unreliable and careless workers who quit the job as soon as they had other work. Women were then hired 'as an experiment'. The women performed the waste removal work to everybody's satisfaction, motivated by their desire to make full use of this rare opportunity to earn regular money, albeit in very difficult conditions.

Do unequal gender relations affect the willingness to pay for services?

The question is: When households pay directly for the waste removal service (instead of through municipal taxes), are these users more willing or likely to pay women service providers or men providers? It is assumed here that the bills are collected personally by going from house to house. Although payment for services seems a simple financial transaction, in reality it is embedded in a social context of reliability, authority, and recognition of the value of the service rendered.

³ Arsens, M.T., "Community Participation in Urban Solid Waste Management in Ouagadougou - Burkina Faso", ENDA -WASTE, Case Study Report, 1998

In one neighbourhood of Dar es Salaam, for example, it was recognised that bills should be collected by a team consisting of a young person, man or woman, accompanied by an older woman, for maximum social authority.

In Bangalore, India, the project team had different experiences.

"The core group of residents in the first neighbourhood were all retired men, members of a welfare association. They did not willingly participate in the door to door mobilisation process, and thus community participation in door-to-door garbage collection remained poor. In another neighbourhood members of a women's club engaged in community mobilisation. This was a business locality and although people were rich enough, there was resistance to pay the meagre amount of Rs 10 per household per month to a waste collector. Here, men controlled money and as they perceived door to door collection as a women's initiative, they did not take it seriously. In the next area both men and women were mobilised and the core group in this area is the most vibrant and innovative one. I do not completely subscribe to the point that just because it has both men and women's participation it is active. But I do believe that it may have played an important role. Other factors, for example, socio-economic background or the community as a group, history of community efforts do play equally important role.⁴"

How do internal household dynamics affect willingness to pay for services? Who decides on the service payment, husband or wife?

This refers to the general gender questions of who controls household expenditure; and whether women have the right to use their self-earned income according to their own assessment of what is necessary. When husband and wife have each responsibilities for specific household expenditures, and thus keep separate budgets, under whose responsibility falls the waste removal service?

An example from Quetta, Pakistan observes that since women do not have their own income to pay for the service they rely on the men to give them extra money to pay for it, or they save from the already meagre household budget available to them if at all. For this reason, men are in control of what services the family can have access to⁵.

An example from Bamako, Mali, illustrates the intra-household mechanisms, as told by a wise old man. Suppose the husband decides that the household should pay for garbage collection. Then there are several possibilities:

- ◆ He pays for it himself.
- ◆ He may tell his wife that should pay from her own income, e.g. from market trading.
- ◆ He may tell his wife to pay, even if she has no independent source of income.
- ◆ Or the wife pays from her own income, although the husband has not given approval.⁶

4 Shah, Esha, Electronic Conference on Gender and Waste Management, Conference Archives, 1998

5 Gohar, Bushra, in Anne Scheinberg, Maria Muller, Evgenia L. Tasheva, Gender and Waste: Integrating gender into community waste management: project management insights and tips from an e-mail conference, 9-13 May 1998, WASTE, UWEP Working Document 12

6 Muller, Maria, in Gender and Waste, WASTE, UWEP Working Document 12

Understanding commodities-based waste activities from a gender perspective

Are scavengers mostly men or women?

As Furedy already noted in 1990, the majority of the thousands of waste pickers on any dump site are adult women and children.⁷ What are the reasons that cause this inequality? One of the processes at work is that of the vicious circle of poverty in very poor families. It is known that in most cities at least 30% of all households is headed by a woman who is the sole income earner, and that the majority of very poor families is headed by a woman (the feminisation of poverty). In very poor households the income that children can earn is absolutely necessary, and so if mothers are working at the waste dump, the work training they can give their daughters is at waste picking. When the girls get only very limited school education (maybe less than boys) and do not acquire the skills required for other jobs, one can expect that they will continue their working life at waste picking.⁸

One could look at this positively, and hypothesize that intensive on-the-job training on the dump, equips a woman (or a man) for a career as a buyer or dealer in waste, having become part of a social network that makes a business out of waste and controls the waste flow in the city.

Are there gender divisions of "rights" to certain materials? And do men and women waste pickers and collectors earn the same income when they work at the same sites?

There are certainly gender-related rights in the recycling sector. Women tend not to be permitted access to higher-value materials like metals or paper, but focus on textiles, plastics and the like, while materials relating to vehicles - automobiles, motorcycles, bicycles, animal carts - appear to be more likely to be recovered by men.

It would be interesting to see if women are permitted to work with compost. As it is often "traditionally" not being recovered, it may be considered 'gender-neutral', and provide substantial opportunities for women

An interesting survey done in Hanoi provides an insight into the different income levels earned by social categories.⁹

7 Furedy, C., "Social Aspects of Solid Waste Recovery in Asian Cities", *Environmental Sanitation Reviews*, no.30,1990; also, Hunt, C., "Child Waste Pickers in India: the Occupation and its Health Risks", *Environment and Urbanization*, vol. 8 (2), 1996

8 Huysman, M., "Waste Picking as a Survival Strategy for Women in Indian cities", *Environment and Urbanization*, vol.6 (2), 1994; Hunt, C., *op.cit.*

9 Digregorio, Michael, *Territory and Function in the Red River Delta; the case of Hanoi's recycling industry*, WASTE, UWEP Occasional Paper, July 1997

Table 1. Daily income, expenses and saving by origin of recyclers, working in central Hanoi, the municipal composting plant and the municipal landfill in Hanoi (in US \$).

| | <i>Daily income</i> | | | <i>Daily expenses</i> | | | <i>Monthly saving</i> |
|-----------------------|---------------------|-------------|--------------|-----------------------|-------------|--------------|-----------------------|
| | <i>Low</i> | <i>High</i> | <i>Aver.</i> | <i>House</i> | <i>Food</i> | <i>Other</i> | |
| <i>All recyclers</i> | 0.67 | 2.61 | 1.41 | 0.23 | 0.46 | 0.23 | 23.22 |
| <i>From Provinces</i> | 0.62 | 2.06 | 1.29 | 0.20 | 0.43 | 0.21 | 22.63 |
| <i>Female</i> | 0.59 | 1.89 | 1.19 | 0.22 | 0.38 | 0.26 | 22.21 |
| <i>Male</i> | 0.70 | 2.48 | 1.53 | 0.14 | 0.56 | 0.17 | 23.67 |
| <i>From Hanoi</i> | 0.86 | 4.99 | 1.88 | 0.73 | 0.61 | 0.25 | 25.89 |
| <i>Female</i> | 0.71 | 2.47 | 1.57 | 0.00 | 0.44 | 0.28 | 23.88 |
| <i>Male</i> | 0.98 | 7.06 | 2.14 | 0.73 | 0.73 | 0.24 | 27.47 |

Survey data, Michael Digregorio

The table shows that

- 1) Recyclers from two rural provinces earn less than those living in the suburbs of Hanoi;
- 2) Women in each category earn less than men;
- 3) Women have a smaller range of income than men.

Assuming that both men and women work full time, we may conclude that women work with less valuable materials. Another possible explanation of the income difference is that women do not work full time, as they have to divide their time between their 'jobs' as housewife, mother, and waste picker.

An example from Hyderabad, India, where men earn nearly twice as much as women in the recycling sector, provides an ideologically coloured explanation.

"Women earn between Rs.18-40 per day while men earn Rs. 40-70. In glass: women earn Rs.20, while men earn Rs.30 (child Rs.15) per day; and in plastics women earn Rs. 25-30 and men Rs. 35-40 per day. The logic behind the price difference is due to men doing 'hard' labour, namely carrying the waste while women get less for sorting out the waste".¹⁰

The logic could easily be turned upside down, resulting in a pay increase for women : women use expertise and skill for sorting, while men 'merely' use physical labour. This reasoning also has a gender-biased flavour.

¹⁰ Snel, M., in Gender and Waste, WASTE, UWEP 12 Working Document

Are scavenger men and women concentrated at the landfill, or do they scavenge transfer stations (sidewalk depots) as well? What is the concentration of women or men at these different points?



Scavengers at the municipal landfill of Me Tri, Thanh Tri, Hanoi
©WASTE, Michael Di Gregorio

Given intense competition for waste materials, one would expect that gender inequalities also exist with respect to the best places to obtain high-value materials. Transfer stations, being closer to the source of the rejected materials, are the preferred places for scavenging, more so than the dump or land fill, which is at the end of chain of rejection. The most powerless people end up there for scavenging, among which are the women. This is an hypothesis which has to be verified.

What determines the weak negotiating position of the waste pickers and collectors especially of women, vis-à-vis the junk shop owners?

Lack of basic skills is one of the problems. Can waste pickers, men and women, read the weighing scales and can they calculate the amount of money due to them? ¹¹ No they cannot, if they have none or little formal education. Are waste pickers able to use independent sources of information, for example to check the information of the junk shop owner, that "market prices have dropped"? No they cannot, unless they are part of an organisation or group that gives them that information. Another problem is that some junk shop owners or dealers control a section of the dump, including the waste pickers and their collected materials. This control prohibits waste pickers to sell for the highest price to another dealer. Certainly women are not able to move freely with their collected materials to other dealers.

This raises the issue whether it be feasible that workers organise themselves to strengthen their position vis-a-vis waste dealers, the Municipality, and the general public. In Belo Horizonte City, Brazil, for example, waste pickers have formed an association. They were supported by a religious NGO. When the City Cleansing

¹¹ Furedy, C., "Garbage: exploring non-conventional options in Asian cities", Environment and Urbanization, vol. 4 (2) 1992; Huysman, M., op. cit.

Department started several years later a selective handling and treatment system of solid waste, they found the waste pickers association a ready partner.¹² An interesting question arises whether men and women are members of the same association.

Are traders and junk shop owners men or women? How does this relate to the sex of traders in general? Or in other words, is trading in a modern urban setting consistent with socially accepted notions of what women and men should be doing?

In East and West Africa, for example, women are engaged in small scale trading, and one also finds some women who are the recognised head of a junk shop business. In the Philippines, one finds similar examples: in Bauan, half the junk shops are owned by women. The first conclusion is therefore, that trading in these countries is socially accepted for women.

However, women traders do face obstacles, as an example from Ghana, where women have an age-long tradition of small and large scale trading, elaborates.

"The waste enterprises are mostly owned by men, with very few owned by women. The women started with loans from friends or family. The men also start with similar loans except that they could get bigger sums of money because they are considered to have better collateral. Therefore they deal in the sort of waste that gives quick and big returns on investments."

"In the bottles trade in Ghana, you will find women dealing with sales for reuse. Obviously their incomes aren't big and their expansion of operations is limited by several factors. Lack of financial support, no major industries to buy from them (lack of appropriate markets) and the women also lack the managerial skills due to low education if any at all. On technology, the women have little access to technology because they are limited to only recovering of the material that can still be used or to retail and warehousing."¹³

Yet another factor determining business expansion are the attitudes towards risk and security in business. Research has shown that small scale traders, and especially women, place a high value on a secure and stable income.¹⁴ They will not put their present business at risk through expansion, but rather prefer to diversify into small-scale different activities.

This attitude (or business acumen) has saved an MSE providing a waste removal service in Dar es Salaam from collapse, when they lost their municipal cleaning contract. They had already diversified to the collection, cleaning and sale of recyclables .

¹² Dias, Sonia Maria, "Integrating Waste Pickers for Sustainable Recycling - Planning for Sustainable Waste Systems", paper presented at the Collaborative Working Group conference, Manila, 2000

¹³ Samson J. Nibi, in *Gender and Waste*, WASTE, UWEP Working Document 12

¹⁴ Everts, S. I., "Technology Transfer for Women Entrepreneurs: Issues for Consideration", *Gender, Technology and Development* vol.2 (1), 1998

Summary of gender aspects in waste management

The previous section has indicated how gender plays a role in the waste sector, just as it does in other sectors of society. No systematic research has as yet been undertaken to substantiate these observations made in real life situations. Nor is the presentation exhaustive, and other gender factors are likely to affect the operation of waste strategies as well. The gender factors of the previous section are summarised as follows.

- ◆ Social networks are very important social instruments in public and economic life, as well as in the waste sector. As in all societies these networks are dominated by men, it is difficult for women to obtain positions of influence and decision making on policy and practical matters. Women use their own social networks of family members and friends (including men) to try to influence practices and obtain access to resources like contracts and loans.
- ◆ Low-paid waste work as employment of the last resort, is socially acceptable for women when it is consistent with a "tradition" of women doing unpaid cleaning in public places. However, it is sometimes used as an argument to exclude women deliberately from the more profitable waste work.
- ◆ Women are respected for their voluntary cleaning of public places, yet at the same time they are despised for working with waste materials.
- ◆ Women earn less with scavenging and waste collection than men when: 1) gendered rights permit women access only to low-value materials at the least profitable places; 2) women spend less time at waste work than men, because they also have duties as mother and housewife.
- ◆ As women earn less, they also save less.
- ◆ Women are less mobile than men because of their duties at home.
- ◆ Both men and women waste workers need more basic skills, training, and access to information. It is to be expected that women and men, girls and boys have slightly different needs in this respect.
- ◆ Where men control household expenditure, they determine whether households will pay for the waste removal service and thus for a clean environment.
- ◆ Small-scale traders, particularly women traders, prefer risk -avoidance entrepreneurship as a strategy for improving their livelihood.

Conclusion: expanding the informal waste sector in a gender-sensitive manner

This paper has addressed the issue of increasing employment opportunities in the urban waste sector in a sustainable manner, as well as the ability of both women and men to take advantage of these work opportunities. The paper has focused on small-scale, mostly informal activities, carried out by women and men who often are organised in some form of micro or small enterprise (MSE). As cities grow and as more people adopt a higher level of consumption and discard more used materials, the amount of waste in cities will continue to grow. The demand for waste removal services and the supply of recyclable materials will thus increase. This does not

automatically mean that individuals and MSEs in the informal waste sector will be assured of increased employment and income. Much depends on government policies and strategies and on the power of national and international private companies. The latter aim at capturing the waste market rather than at maintaining employment for thousands of people.

What has to be done to assure at least the continuation of employment and income for women and men from small-scale waste work? Our approach is two-fold, to strengthen the informal waste sector, and enable women and men workers to make full use of the opportunities.

First, to strengthen the informal waste sector, it is desirable that government and the general public will recognise the valuable contribution of the people engaged in removing, collecting and recycling waste materials in terms of economic development, environmental health, and social development. It is further necessary that government recognises that the public sector alone cannot be responsible for urban waste management, and that residents as well as the private sector have responsibilities. Accordingly, the authorities will consider all actors in the informal waste sector as stakeholder groups with legitimate interests, who are able to coordinate with government in implementing its overall waste strategies. In this new policy climate, Government authorities and stakeholder groups will together assess what activities can be undertaken to strengthen the informal sector and, where feasible, to integrate it with the formal sector.

It may be feasible, for example, to organise garbage removal in a complementary manner, whereby the MSEs become responsible for primary removal and the local authority for secondary removal and final disposal. A contract will formalise and legalise the agreement. Or, an other example of integration, it may be feasible to assure a stable demand for recyclable materials, by strengthening the linkages between enterprises in the recycling sector, such as between waste pickers, itinerant buyers, middle dealers, and industries as buyers of recyclable materials.

Second, to enable people and MSEs to participate fully in an expanding sector, gender sensitive measures can be taken. Service MSEs, for example, may be able to increase efficiency by taking out a loan for investment in equipment. The organisation that provides loans will be aware of the gender-specific conditions that make loans accessible for women as well as men. Moreover, MSEs will be in a better position to collect service charges from customers if they adopt a gender-sensitive approach, suitable to their neighbourhood. It is also necessary that women and men will be enabled to negotiate contracts that offer realistic terms of work and payment conditions.

For people in the recycling sector, increasing their margins will be achieved through economies of scale. It will come from aggregation of materials and sales to a higher placed dealer in the purchasing chain. And it will come from adding some activities (e.g. accurate sorting and cleaning) that are usually carried out at a higher level. To increase one's scale of operations, not only financial investment may be required, but also mobilisation of extra human resources. Waste pickers may pool their resources to rent storage space and transport, and they will engage women and children for (unpaid) assistance. Women usually have greater difficulty in mobilising these

resources than men. Nevertheless, as even irregular forms of cooperation enable waste pickers and collectors to earn more, it is worthwhile to investigate how such cooperation can be strengthened in a gender sensitive way. It may develop into a formal association.

In conclusion we say that before allowing a private, high-tech company to intervene in and disrupt the present operation of the waste sector, it is absolutely necessary that the government understands what the existing situation is regarding waste removal, recovery of valuable materials, and income generation for a large number of people and their families. Then the government can make an assessment and a prediction of the likely effects of the intervention and assess whether these are favourable from several points of view.

The investigation will also reveal what measures are necessary to equip men and women to continue and expand their waste work. Municipal Social Departments and non-government organisations can promote such developments by designing appropriate, gender-sensitive support.