

## **WELL Study**

# **Lessons from community-based initiatives in solid waste**

## **Task No: 99**

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## **Abbreviations**

CBO	Community-based Organisation
DFID	Department for International Development
KAWWS	Karachi Administration Women's Welfare Society
NGO	Non-governmental Organisation
Rs	Rupees (currency of Pakistan £1 = Rs 75 approximately)
SANDEC	Department of Water and Sanitation in Developing Countries, EAWAG Duebendorf, Switzerland
WEDC	Water, Engineering and Development Centre, Loughborough University

## Summary

The purpose of this study is to identify the key lessons which have been learned from a variety of community-based initiatives in the collection of solid wastes from residential neighbourhoods in developing countries. This was achieved by reviewing specific case studies and general literature. Local community-based initiatives generally arise because municipal authorities are unable to cope with the rapidly expanding demands made on the formal waste management system. This study has reviewed local initiatives which fall into three general categories:

- An activist or group of households collectively recruits a person for primary collection, agreeing a minimum fee and paying it individually to the waste collector.
- An activist or group of households actively manages the system, arranging the collection of fees and payment to the waste collectors.
- A small contractor starts the collection service as a business and takes on the various associated investment and employment risks.

The lessons learned are presented as a series of issues; constraints and potential solutions are identified. The following guidance points are suggested for supporting local initiatives in the primary collection of solid waste:

- Do not assume willing participation from the outset; communities, waste collectors and municipal government all require strong motivation.
- Awareness raising and education are important in changing attitudes towards the health and environmental benefits of improved waste management.
- Do not overlook the necessity for partnership with the municipality.
- In common with any scheme, large or small, institutional and financial sustainability is crucial.
- Understand the community composition and structure. Do not neglect the poor and weaker sections of the society and remember that women are the household managers of waste.
- There are important technical details to be resolved before the waste collection scheme starts.
- There are relatively few fully documented and substantive studies on primary waste collection schemes. This is a significant gap in knowledge that could usefully be addressed in the future.

## 1. Purpose

The purpose of this study is to identify the key lessons which have been learned from a variety of community-based initiatives in the collection of solid wastes from residential neighbourhoods in developing countries. The readership for the report comprises DFID staff, their local project partners in government and NGOs, and consultants. It will be of particular use during the identification and preparation of projects that involve:

- primary collection of waste from households and communities;
- 'cleaner local environments' through resident/CBO/NGO actions;
- municipal collection and transport of solid waste; and
- recycling and reuse of waste materials.

The work presented is based primarily on a review of existing literature and case studies, and we particularly acknowledge the work undertaken by SANDEC in Switzerland and WASTE in the Netherlands. In addition, we collected additional primary material when visiting Pakistan and India in late 1998. The report is structured as follows:

- background to community-based waste collection schemes;
- lessons learned, presented as a series of boxes, each of which draws attention to a particular key issue; and
- a concluding section which draws together some of these key issues and actions into overall guidance points.

## 2. Community-based waste collection schemes

The processes and systems in place for the collection, transport and disposal of municipal solid waste in developing countries can be very complex. These involve activities undertaken by the formal institutions of urban government, the informal sector, and residents of local neighbourhoods. These systems and the stakeholders involved are described in *Stakeholder Participation in Solid Waste Collection* (WELL STUDY TASK NUMBER:69 MARCH 1999).

The first stage in the solid waste chain is that waste, which has been generated by a household, shop or small enterprise, is stored on the premises. There then follows primary collection, when the waste is collected and taken either to an intermediate storage place or directly to a disposal area. In this study we are concerned with community-based initiatives in primary collection; that is the collection and removal of waste from the immediate neighbourhood.

In most towns and cities, it is municipal government that is responsible for waste collection, transport and disposal, although in some cities there may be a specialist waste management agency. Roles and responsibilities are often unclear and overlapping. Waste management is one of the most expensive municipal services, and many authorities are unable to cope with the rapidly expanding demands made on the formal waste management system. This, then, is the reason why informal (i.e. unregistered and unregulated) local initiatives arise. It is important to realise that there is no ideal model for community-based waste collection schemes, and it is not the purpose of this study to propose one. We have found that local initiatives arise in response to local conditions, and our objective is to draw out common themes, issues and problems.

In broad terms, we can conceive of three different groups of actors involved in local initiatives:

- householders who generate the waste;
- waste collectors, who are the men and women who collect the waste; and
- intermediary organisations, such as NGOs and CBOs, whose roles can vary widely: for example, they can act in an indirect sense purely as a facilitator, or at the other extreme as a service contractor who makes a contract with individual households and employs waste collectors.

In primary waste collection, we are dealing with local initiatives that are usually geographically defined. Forthcoming work by Ali and Cotton on microenterprise development in primary collection of solid waste presents a typology of different primary collection initiatives. We can identify three general situations in relation to the cases studied in this report.

- An activist or group of households collectively recruits a person for primary collection, agreeing a minimum fee and paying it individually to the waste collector. The system operates firstly because of the waste collector's 'entrepreneurship', and secondly as a result of social obligation developed through the collective effort to ensure that the waste collector gets regular payments (including non-agreed discretionary payments and gifts).
- An activist or group of households actively manages the system, arranging the collection of fees and payment to the waste collectors.

- A small contracting operation, in which an individual or group starts the collection service as a business and takes on various risks, including responsibility for necessary investments and employing a number of waste collectors.

The following sections discuss the common issues encountered by these local initiatives.

### 3. Lessons learned

In this section we abstract the most important issues arising from the cases reviewed and we attempt to synthesise the specific lessons which they have to offer. Limitations of space mean that full descriptions of each case study cannot be provided herein; they are already documented, and specific references are provided in relation to all of the lessons learned. However, in order to set the scene and provide background as to the type of situation we are dealing with, one short illustrative case is presented in Box 1 (page 9).

The lessons learnt are presented as a series of specific issues. These are:

- willingness to participate;
- linkages with the municipality;
- finance;
- ability of the poorest to pay for the service;
- reliability of workers;
- location and space for communal bins;
- gender sensitivity;
- equipment; and
- transfer and transportation of waste.

The following format is adopted: each issue is defined; we describe what the cases have told us about constraints in relation to each issue, and then review the potential solutions to overcome these constraints.

We have classified the literature reviewed according to the level of detail which is provided about community-based initiatives in the primary collection of solid waste as follows:

- Primary source material (class 'a') which describes specific schemes in great detail; there are relatively few of these.
- Secondary material (class 'b') which provides a less detailed and more generalised description. These are listed by country and region.
- Other material (class 'c') which is of a more general nature but does refer to local initiatives.

We have organised the list of references according to this 'a', 'b' and 'c' classification in order to provide some guidance as to what level of detail the reader might expect. The referencing system in the following boxes is also organised in this way; thus details of reference 6b are found under item number 6 in the secondary materials listing of the references section.



### **Box 1: Local initiative case from Faisalabad - Karachi Administration Women's Welfare Society (KAWWS)**

**Background:** The Karachi Administration Women's Welfare Society (KAWWS) is a group of housewives based in a higher middle income area known as the Karachi Administration Society (Baloch Colony). Each member of KAWWS pays a monthly fee of Rs.60 (UK £0.90) per month to the society. The area is not fully developed i.e. there are a number of open plots. In the absence of a reliable primary waste collection service, these plots become convenient places for the disposal of household waste. The aim of the KAWWS programme, which began in 1990, was to prevent this build up of waste by encouraging the purchase and use of waste bins.

**Operation:** The KAWWS activists motivated housewives to form a group, collect money and purchase the waste collection bins. In addition, some housewives were sufficiently motivated to organise a street sweeping system for their lanes. However, the lack of regular and reliable secondary collection from the bins by municipal crews meant that waste build up continued at waste bin locations. Complaints to municipal employees failed to improve the service and in the end KAWWS made an arrangement with the refuse vehicle driver, paying him a regular amount to ensure reliable secondary waste collection from the area.

In 1994, KAWWS obtained a small grant from UNICEF (Pakistan) for use as a revolving fund for the purchase of waste bins. Shopkeepers and other residents were motivated to place bins at strategic points in the area. An independent evaluation in 1994 concluded that the KAWWS were highly motivated and working well together to improve the local environment, and that the programme had a positive impact on the overall cleanliness of the area.

**Constraints:** The following constraints were identified:

- Municipal officers perceive the initiative as a one-off, and believe that it is beyond their scope to encourage, support or duplicate such programmes. The initiative thus relies upon the continued presence of KAWWS as the catalyst for change.
- The KAWWS has 50 members making regular contributions to group funds. This limited membership means there is little possibility of scaling up the programme.
- The continued development of the area means that there are fewer sites suitable for waste bins. People remain averse to waste bins sited very close to their homes.
- The waste disposal points are close to peoples' homes and there is less need for them to contract municipal sweepers to provide an additional informal primary collection service. Sweepers have lost this additional source of income, and as a result will spend much less time in this area. Less time is spent on official street sweeping and the streets become dirtier.

## Box 2: Willingness to participate

**Defining the issue:** Motivation on the part of the community cannot be assumed, and willingness to manage schemes is initially low. Many communities feel that it is solely a municipal responsibility to undertake the collection, transportation and disposal of waste.

What the cases have told us	Potential solutions
People do not see the relation between waste collection and improved health benefits.	<ul style="list-style-type: none"> <li>Educational promotion of health and environmental benefits to community groups. (Karachi, Pakistan; Hyderabad, Bangalore, India (1a), (3a), (15b)).</li> </ul>
Transfer points are too far away.	<ul style="list-style-type: none"> <li>Supply effective house-to-house collection services. (San Jose, Costa Rica (49b)).</li> </ul>
Secondary waste collection and transportation is unreliable.	<ul style="list-style-type: none"> <li>Regular and timely collection of waste by municipality. Agreement negotiated between the community and municipalities. (Ouagadougou, Adjoufou II, Burkina Faso; Alladjan, Ivory Coast (45b)).</li> </ul>
Lack of communication between the community and the municipality.	<ul style="list-style-type: none"> <li>Close working relationship between the communities and the urban local government through consultation with the community and the role of planning primary waste collection schemes. (Hyderabad, India (3a)).</li> <li>The community is involved during the design, implementation and follow-up of primary waste collection scheme to enhance ownership of the project. (Kathmandu, Nepal; Bamako, Mali (34b), (40b)).</li> </ul>
Individuals find separation of waste for recycling both time consuming and unpleasant work.	<ul style="list-style-type: none"> <li>Educating the communities on the importance of waste collection and recycling with respect to health, environmental and social benefits. (Hyderabad, Bangalore, Madras, India (3a), (16b), (23b)).</li> <li>Introduce incentives to the community, for example, free bus tickets, food parcels and/or children's school supplies in exchange for sorted waste. (Curitiba, Brazil (48b)).</li> </ul>
Communities do not feel a sense of ownership toward the waste collection scheme in their area.	<ul style="list-style-type: none"> <li>Community workshops involving all groups concerned with the scheme. Important facilitating role of NGOs in developing local ownership. (Centro de Estudio Ambiental in San Jose, Brazil; Association for the Protection of Environment in Karachi, Pakistan; Urban Development through Local Efforts in Patan, Nepal (47b), (12b), (33b)).</li> </ul>
Community members are often suspicious of waste operators.	<ul style="list-style-type: none"> <li>Educate public on the important role of these operators in waste collection schemes from an environmental and health perspective. (Bangalore, Madras, India; Manila, Philippines (11c)).</li> </ul>
Household servants may not be involved in recycling projects, but they may depend on supplementing their income by informal resale of material.	<ul style="list-style-type: none"> <li>New schemes must avoid creating at the household level disincentives for recycling.</li> <li>Need access to recyclable material or the proceeds of the sales. (San Antonio Valley, Philippines (15c)).</li> </ul>

### Box 3: Linkages with the municipality

**Defining the issue:** Waste collection schemes cannot be sustained without establishing strong linkages between the community and the municipality. In many cities, waste collection is a statutory function and the households contribute to the cost of the services through their municipal taxes. Community-based collection schemes could ultimately become part of the municipal system if the linkages between the communities and the municipalities are addressed at the inception stage of the schemes.

What the cases have told us	Potential solutions
Lack of transparency in roles, responsibilities and obligations.	<ul style="list-style-type: none"> <li>· Legislation should be put in place and implemented so that solid waste management services and schemes at the community level can run effectively. (Botswana, Costa Rica, Ecuador, Honduras, Morocco and Swaziland (54b)).</li> <li>· Community groups must be informed about the municipal roles and responsibilities.</li> </ul>
Municipalities have elected representatives; community groups have their own elected officers. Neither accepts the legitimacy of the other.	<ul style="list-style-type: none"> <li>· Creating a city-level platform where both the municipality members responsible for solid waste and elected representatives of the community can come together and discuss the issues on community schemes. (Bangalore, India (20b)).</li> </ul>
Uncertainty concerning the nature and level of assistance over time from the municipality. Community-based collection schemes may collapse when a motivated member of the municipal management transfers, or active community member(s) move away from the neighbourhood.	<ul style="list-style-type: none"> <li>· It is essential for members who are moving out of the municipal office or community to pass on their knowledge and skills to their successors <i>before</i> withdrawing from the scheme. (Shah Rassool Colony, Pakistan (2a)).</li> </ul>
Lack of clear two-way communication between the municipality and community groups concerning changes in the waste collection system e.g. introduction of a municipal private contractor's system which may compete with an on-going neighbourhood collection scheme.	<ul style="list-style-type: none"> <li>· The municipality should provide clear guidelines (on paper) regarding issues such as the financial allocations to supporting the local waste collection schemes. (Hyderabad, India (3a)).</li> <li>· Improve communication with the municipality by informing them of the waste collection activities taking place in the neighbourhoods through leaflets, etc. (Mexico (52b)).</li> <li>· Community must be considered an equal partner in all decision making.</li> </ul>

## Box 4: Finance

**Defining the issue:** In community-based waste collection schemes both cost recovery and access to finance are important. This has to be addressed both at the community level and at the city level.

What the cases have told us	Potential solutions
Municipalities are unable to recover all the cost involved in their solid waste management operations.	<ul style="list-style-type: none"> <li>· Improved financial management systems. (Egypt (15c)).</li> <li>· Offering additional services such as cleaning toilets and bathrooms. (Ivory Coast (15c)).</li> <li>· Change the method of payment. For example, waste fees are paid on top of the sugar prices and are collected through sugar distribution. (Gedaref, Sudan (15c)).</li> </ul>
Community groups may not see the need for centrally operated services such as sanitary waste disposal e.g. paying for landfill.	<ul style="list-style-type: none"> <li>· The community needs to be educated on the importance of an integrated solid waste management system and the adverse impact of poor disposal practices.</li> </ul>
Community groups do not have access to operational finance from the municipality.	<ul style="list-style-type: none"> <li>· Community-based schemes are in the interest of the municipality; explore whether finance could be made available.</li> </ul>
The community-based collection schemes are not able to collect adequate fees regularly.	<ul style="list-style-type: none"> <li>· Provide fee collectors with incentives: may include recyclable items given by householders that can be resold; or receiving a percentage of the fees collected. (Padang, Indonesia (15c)).</li> <li>· Fee collection entrusted to respected community members rather than waste operators. (Hyderabad, India (3a)).</li> <li>· Accounts must be transparent.</li> </ul>

## Box 5: Ability of the poorest to pay

**Defining the issue:** Some households in low-income areas live in extreme poverty and their ability and willingness to pay for waste collection schemes is very limited. They have other higher priorities.

What the cases have told us	Potential solutions
Waste collection is a low priority compared with other household needs.	<ul style="list-style-type: none"> <li>· Address other issues first which are not directly related to waste collection schemes. Expenditure on food, housing, clothing, electricity and education receives higher priority. Confidence of the community members was gained by focusing on other activities related to welfare and health such as a vaccination against the spread of Hepatitis B and 'Celebration of the cleanliness week' to create awareness of waste collection issues. (Shah Rasool Colony, Karachi, Pakistan; Yogyakarta, Indonesia (2a), (19c)).</li> <li>· A sense of ownership is promoted through token payments which do not recover full costs.</li> </ul>
Waste is not considered to be a potential income generating resource.	<ul style="list-style-type: none"> <li>· Design resource recovery facilities close to the generated waste.</li> <li>· Use low cost technologies based mainly on manual labour in which the poor not only manage their own waste collection, but also integrate resource recovery and recycling and allow other communities to profit from this knowledge. The marketing of compost can eventually lead to some profit-running schemes for the low-income communities. (Yogyakarta, Indonesia (30b)).</li> </ul>
Some households can not afford to pay the charges.	<ul style="list-style-type: none"> <li>· Individuals pay a direct service fee to the waste collector's scheme on either a daily or weekly basis. This is more appropriate in low-income areas which may be surviving in the informal economy where wages are unlikely to come systematically at the end of the month. (Douala, Cameroon (44b)).</li> <li>· Cross-subsidies are another way of dealing with difficulties with ability to pay. Some Indonesian project fees are based on the amount of waste collected and/or on the income level of the householder. (Jakarta, Indonesia (15c)).</li> </ul>

## Box 6: Reliability of workers

**Defining the issue:** Waste collectors are those individuals who have been hired by the community or municipality to collect waste either from door-to-door or from waste transfer points. These workers are often perceived by the community to be unreliable.

What the cases have told us	Potential solutions
Lack of incentives available to waste collectors to do their job properly.	<ul style="list-style-type: none"> <li>• Both extrinsic and intrinsic rewards/incentives can be provided to operators.</li> <li>• Extrinsic rewards include collecting recyclable material from the sorted household waste. (Manila, Philippines; Bogota, Columbia; Ho Chi Minh City, Vietnam; Mumbai, India; Tunis, Algeria; Dakar, Senegal (5b), (6b), (7b), (50b), (37b), (24b), (42b), (39b)).</li> <li>• Intrinsic rewards refer to social acceptance by the communities and at a higher level by the national government. Some national governments have recognised the important roles of waste-related workers through officially declaring their essential role in society (India, Indonesia (20c), (31b)).</li> <li>• Part-time employment so that the waste operator will also have opportunities for other work. (Hyderabad, Bangalore, Madras, India (3a), (16b), (23b)).</li> <li>• Cross-subsidies, where different groups pay different fees, allow the waste operators to cover a larger area and more customers e.g. households, industries, commercial businesses, institutions. (Ahmedabad, India (14b), (15c)).</li> <li>• Monitoring the performance of waste operators. Payment to operators can become performance based; instead of being paid monthly they are paid per round. (Chad (15c)).</li> <li>• Provide a group of waste operators with a strong intrinsic 'solidarity' status. This can be achieved by, for example, youth groups getting involved in waste collection campaigns. Any profits are used for youth group activities. (Mumbai, India (24b)).</li> </ul>
Low status and lack of respect for the waste collectors from all levels of society - from the community through to the national government..	<ul style="list-style-type: none"> <li>• The nature of this work is considered to be unpleasant and dirty; citizens need to be educated on the importance of waste collectors.</li> <li>• Promotion campaigns on the value of waste collectors, involving senior government officials.</li> <li>• Provide identity cards to waste collectors, giving them a more official role. (Manila, Philippines (5b), (5c)).</li> <li>• Some national governments have recognised the important roles of waste-related workers through officially declaring their essential role in society. (India, Indonesia (20c), (11c)).</li> </ul>
Waste collectors work in poor conditions and are exposed to many health hazards.	<ul style="list-style-type: none"> <li>• Provide improved equipment and facilities.</li> <li>• Official introduction of waste collectors to residents by locally respected individuals. (Bangalore, India (17b), (18b)).</li> </ul>

Waste collectors are not involved in the decision making process.	<ul style="list-style-type: none"> <li>Involve waste collectors in NGO meetings from the <i>start</i> of the scheme to promote better commitment and motivation. (Hyderabad, India (3a)).</li> </ul>
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### Box 7: Location and space for communal bins

**Defining the issue:** Accumulated waste has to be stored daily before it is transported. This requires adequate space for communal bins to be allocated. Space is also needed for other resource recovery activities such as composting.

What the cases have told us	Potential solutions
Lack of space for storing the accumulated waste before it is transferred.	<ul style="list-style-type: none"> <li>Collaboration between local NGOs involved in implementing the scheme and community leaders in the identification and allocation of space. (Jakarta, Indonesia (31b)).</li> <li>Campaigns to educate the public to use bins properly; this can result in less waste strewn around the bin. (Hyderabad, Bangalore, India; Manila, Philippines (3a), (15b), (5b), (10c)).</li> <li>Lobbying for space to be allocated by the municipality. (Mali (15c)).</li> </ul>
Lack of dialogue between the municipality, intermediaries and households regarding space for resource recovery by waste collectors.	<ul style="list-style-type: none"> <li>Create a discussion group/city-level forum where stakeholders can discuss issues such as lack of space for bins and land to undertake composting. (Yogyakarta, Indonesia (30b)).</li> <li>Media campaign with the help of youth groups to focus on the importance of sorting waste and composting. This can ultimately reduce the residual waste quantity. (Mumbai, India; Cameroon (24b), (15c)).</li> </ul>
High cost of land.	<ul style="list-style-type: none"> <li>Space allocated for this purpose may be encroached by pavement dwellers; this is common in South Asia.</li> </ul>
Municipal apprehension that the allocated space will be encroached or used for other purposes.	<ul style="list-style-type: none"> <li>Provide clear signboards stating that the area is for waste collection purposes only. (Kathmandu, Nepal; Bangalore, India (33b), (15b)).</li> </ul>
Residents do not want waste storage in the vicinity of their houses.	<ul style="list-style-type: none"> <li>Waste placed in 'garbage houses' (2 metres wide, 3 metres high) so that waste is not visible. (Hyderabad, India (3a)).</li> <li>Joint monitoring with the community.</li> <li>Provide reliable service for house to house collection of waste. (Faisalabad, Pakistan (9b)).</li> </ul>
Communal bins are not well managed which creates a nuisance for local residents.	<ul style="list-style-type: none"> <li>City/community level forum in which the community and the municipality can discuss how to improve communal bins systems. (Bangalore, India (20b)).</li> </ul>

## Box 8: Gender sensitivity

**Defining the issue:** Women are to a large extent responsible for household waste management, including dealing with servants and itinerant waste buyers. A proportion of municipal sweepers (waste collectors) is female. There is an important gender dimension at both levels.

What the cases have told us	Potential solutions
<b>Household level</b>	
Women, as managers of waste at the household level, are insufficiently aware of the important role of waste collectors and sweepers.	<ul style="list-style-type: none"> <li>· Educating women householders on the importance of the role of waste operators in the schemes, and on the additional reuse, recycling and solid waste separation; this is important for the <i>social acceptance</i> of waste collectors (Faisalabad, Ghousia Colony Karachi, Pakistan; Patan, Nepal; Cebu City, Makati City, Philippines (10b), (12b), (35b), (3b), (4b)).</li> </ul>
<b>Primary collection level</b>	
Equipment is often inappropriate for use by women waste collectors.	<ul style="list-style-type: none"> <li>· Tools such as brooms, shovels and wheelbarrows are often heavy and require a lot of physical strength in use. The need for lighter-weight and suitably sized equipment needs to be recognised at the planning stage. (Delhi, Calcutta, Jaipur, India (26b)).</li> </ul>
Women lack basic training in carrying out minor running repairs.	<ul style="list-style-type: none"> <li>· Train women waste collectors in basic repair skills for simple tools and tricycles. Women can be paid for these additional services.</li> </ul>



## Box 9: Equipment

**Defining the issue:** Primary waste collection schemes require appropriate equipment for collecting, loading and transporting the waste. For an efficient waste collection system, it is important to use affordable equipment which is appropriate to the physical nature of the area and to the characteristics of the waste.

What the cases have told us	Potential solutions
Lack of appropriate tools and equipment for the collection of waste.	<ul style="list-style-type: none"> <li>· Purchasing additional equipment such as brooms and shovels to improve the effectiveness and efficiency of the waste collectors (19c).</li> <li>· Consult waste collectors during the design and pilot testing of equipment.</li> </ul>
Lack of appropriate equipment for transferring collected waste.	<ul style="list-style-type: none"> <li>· Select appropriate loading/unloading procedures at transfer points. For example, collection carts could contain bins and/or large bags which could be lifted out at the transfer point and unloaded without too much difficulty. (Sao Paulo, Brazil; San Jose, Costa Rica (47b), (49b)).</li> </ul>
Health and safety of waste workers is often overlooked while choosing equipment.	<ul style="list-style-type: none"> <li>· Equipment must be designed and monitored, keeping in view health and safety of the workers.</li> <li>· Purchasing of protective clothing such as boots and gloves are necessary especially where sharp objects and infectious waste are collected. In addition, uniforms create a team spirit and pride among the waste operators. They also provide a form of identity so that householders can easily spot waste operators from a distance. (Manila, San Juan City, Philippines (5b), (6b), (7b)).</li> </ul>
Lack of repair and maintenance of the equipment.	<ul style="list-style-type: none"> <li>· A repair and maintenance system must be put in place before equipment is purchased.</li> </ul>

## Box 10: Transfer and transportation of waste

**Defining the issue:** A reliable primary waste collection scheme depends upon the design and location of transfer points and subsequent haulage of waste by the municipality to the disposal sites.

What the cases have told us	Potential solutions
There is a lack of co-operation and co-ordination between primary collection schemes and the subsequent transfer and haulage by the municipality.	<ul style="list-style-type: none"> <li>· A timely and regular secondary waste collection service is vital for effective operation of primary waste collection schemes.</li> <li>· Active co-ordination and enforcement by the municipality to improve links between primary and secondary collection. (Burkina Faso and Ivory Coast (45b)).</li> </ul>
Waste pickers create a nuisance at transfer points.	<ul style="list-style-type: none"> <li>· Community monitoring in the areas where waste pickers sort through the waste, to ensure that remaining waste is placed back in the bin after sorting. (Cirebon, Indonesia (32b)).</li> <li>· Provision and operation by the municipality of a small recovery center where recyclable waste from transfer points can be sorted out. (Manila, Philippines; Jakarta, Indonesia (5b), (31b)).</li> </ul>
Waste transfer points are often too far away from primary waste collection scheme.	<ul style="list-style-type: none"> <li>· Depending on the nature of the primary collection scheme, the transfer point should be within about 1 kilometre (19c).</li> </ul>

## **4. Guidance points**

In conclusion, we draw out a number of key guidance points.

### **Guidance Point 1:**

Do not assume willing participation from the outset; all parties require strong motivation.

- Communities lack motivation as they often believe waste collection is a legal and obligatory responsibility of the municipality.
- Waste collectors lack sufficient extrinsic (financial) and intrinsic (social) rewards and incentives to work for the collection schemes.
- Municipal government fails to see the potential benefits which locally organised collection schemes can bring to their own operations.

### **Guidance Point 2:**

Awareness raising and education are important in changing attitudes towards the health and environmental benefits of improved waste management

### **Guidance Point 3:**

Do not overlook the necessity for partnership with the municipality. The ultimate success of local initiatives in primary collection depends upon transfer and secondary transportation by the municipality or its agents.

### **Guidance Point 4:**

In common with any scheme, large or small, institutional and financial sustainability are crucial. Costs have to be recovered either directly or through local cross subsidy. The local organisation whether it be NGO, CBO or a small contractor is central to continued success.

### **Guidance Point 5:**

Understand the community composition and structure. Do not neglect the poor and weaker sections of the society and remember that women are the household managers of waste. Collection schemes cannot be successfully operated without the full involvement and commitment of the users.

### **Guidance Point 6:**

There are important technical details to be resolved before the waste collection scheme starts. These range from using appropriate equipment which suits the waste collectors, to the location of secondary waste collection bins.

There are relatively few fully documented and substantive studies on primary waste collection schemes. Much of the literature lacks detail and strategic analysis on how to implement improvements. In particular, there is very little material from Africa, as compared with Asia and Latin America. This is a significant gap in knowledge which could usefully be addressed in the future.

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