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Solid Waste, Health and the Millennium Development Goals

A Report of the CWG International Workshop Kolkata, India, 1 to 5 February 2006



Compiled by Adrian Coad



Collaborative Working Group on Solid Waste Management
in Low- and Middle-income Countries

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**Collaborative Working Group on Solid Waste Management
in Low- and Middle-income Countries**

Published by: CWG - Collaborative Working Group on Solid Waste Management
in Low- and Middle-income Countries

Report sponsored by: GTZ - Deutsche Gesellschaft für Technische Zusammenarbeit,
on behalf of
BMZ - German Federal Ministry for Economic Cooperation and Development

Author/Compiler: Adrian Coad

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Cover photograph: Jessica Koehs

Other photographs: Jessica Koehs and others

Layout: Adrian Coad and CWG Secretariat, c/o Skat, CH-9000 St.Gallen, Switzerland

500 copies printed by Niedermann Druck AG, CH-9016 St.Gallen, Switzerland

St.Gallen, April 2006



CWG

**Collaborative Working Group on Solid Waste Management
in Low- and Middle-income Countries**

CWG Secretariat
c/o Skat
Vadianstrasse 42
CH - 9000 St.Gallen, Switzerland
email: cwg.secretariat@skat.ch
web: www.cwgnet.net

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This report is accompanied by a CD-Rom containing this report in electronic form and the following additional materials:

- Main plenary presentations
- Thematic working groups
- Inaugural events
- Poster presentations
- Other posters and papers
- The CWG - introduction & election
- Debate and discussion topic
- Guidelines for workshop functions
- Photos from site visits
- Some additional photos



The participants outside the Vedic Village (There are individual photographs in Chapter 5)

1. Introduction

1.1 The context

This is the report of a workshop that was organised jointly by the CWG [the Collaborative Working Group for solid waste management in low- and middle-income countries] and the WSSCC [the Water Supply and Sanitation Collaborative Council]. It was the 7th CWG workshop and the first to be held after the CWG became one of the working groups of the WSSCC in 2004. The meeting was held in Kolkata, India from 1 to 5 February 2006.

It was also the first CWG workshop to be held after the formation of an ongoing planning and management capability, which was supported initially by GTZ [the German Agency for Technical Co-operation] and, more recently, with core co-funding from the DGIS of the Netherlands Government. The Workshop therefore marks a new stage in the development of the CWG.

Today the international picture regarding solid waste management is complex and dynamic. Different stakeholders have different objectives. Situations and needs vary widely between countries, and between capital cities, smaller cities and rural areas. In many countries there is an urgent need for institutional reform, better financial management and capacity building, and yet solid waste management seems to be low on the agendas of national authorities and development agencies, and municipal authorities often lack the tools to deal with the challenges posed by solid waste management - challenges of which they are very aware, and with which they wrestle with inadequate resources.

This Workshop is therefore set in the context of the pressing need for a greater awareness of the importance of solid waste management, and of the determination of the reinvigorated CWG to assist cities and towns of the developing world to improve living and environmental conditions.

1.2 The theme of the workshop

Solid waste, health, and the Millennium Development Goals.

1.2.1 Solid waste

The Workshop focused deliberately on solid waste [garbage, refuse] and did not broaden its scope to water supply, wastewater and excreta disposal, although there are clear links to these other fields of public health promotion, and although water supply and excreta disposal are generally higher on the list of priorities where these services do not exist in any reasonable form. The Workshop focused mainly on municipal solid waste – wastes from homes, shops and businesses – because satisfactory management of these wastes usually precedes – both in time and importance – satisfactory collection, treatment and disposal of other kinds of solid wastes.

Whilst recycling of wastes in industrialised countries requires additional public financing, waste in low-income countries is a resource that can generate livelihoods for significant proportions of the urban populations. Therefore solid waste management becomes not just a means of collecting and getting rid of solid wastes, but also a way of enabling many to provide for their families. The twin challenges – (i) of providing a satisfactory and reliable collection and disposal service for all residents of a city, and (ii) of improving the living and

working conditions of the large numbers waste recyclers – are daunting and complex, and there is an unfortunate tendency for managers and development workers to polarise towards one or the other. Integration of these two aspects is vital, both for providing sustainable services and for reducing the hostility and health risks faced by the communities that convert waste into resources.

1.2.2 Health

The growth of cities in Europe, fuelled by the industrial revolution, created grossly insanitary conditions that demanded solid waste collection services in order to reduce the incidences of debilitating epidemics and respiratory disease. The same enemies to health and welfare remain at the door, as India was reminded in 1994. As other objectives gain our attention, it is important that we do not forget the initial and fundamental reason for solid waste management – the protection of public health.

The WSSCC and the WASH campaign have done much to focus efforts in water supply and sanitation on improvement of health, rather than just on the provision of physical infrastructure and the installation of equipment. The CWG should follow this lead in looking critically at actual health impacts and emphasising the importance of individual behaviour on public health.

The large numbers of men, women and children that are involved in waste recycling face serious risks from infection and injury; all initiatives that work with them must work to reduce health risks as they seek to improve their economic and environmental conditions.

1.2.3 The Millennium Development Goals

The Millennium Development Goals [Section 2.2] have set targets and sharpened focus on many issues which can improve the lives of those who manage to live on incomes that are lower than the average. These Goals do not explicitly mention solid waste management, yet improved management of garbage and other residues can have a significant impact on many of these Goals and Targets. One of the aims of this Workshop has been to investigate and expose the links and impacts, in order to draw attention once more to solid waste management and its essential role in improving living conditions.

1.3 The readership and structure of this report

This report is written both for those who participated in the Workshop and for other readers who were not present. Those who participated will find reminders of the main points that were raised and discussed, a full record of all papers, and details that will enable them to maintain contact with other participants. Readers who were not at the Workshop will find a wealth of experienced-based information on recent developments and innovations with solid waste management, as well as indications of how perceptions, objectives and approaches are being redefined. There is a clear message that solid waste management can make a significant impact in achieving the Millennium Development Goals [MDGs], and papers and discussions show how this can be done.

Following this introductory chapter is a summary of the main links between solid waste management, the MDGs and health. In this Chapter the reader will find the main conclusions from the Workshop.

Chapter 3 reviews the processes of the Workshop, and may be of most interest to those who are organising similar workshops or who are interested to understand how certain

understandings or decisions came into being. Those with interest only in the main thematic points may decide to skim or miss this part.

Chapter 4 presents thematic material in more detail, providing the outputs from the activities described in the previous chapter. It includes a selection of quotations from the presentations [Section 4.2].

Chapter 5 – the annexes – includes information about the participants, the evaluation of the Workshop, and a summary of the decisions made in a planning workshop that followed the main Workshop.

It is unfortunate that many readers will not take the trouble to open and browse through the CD that is fixed inside the back cover, because there is a wealth of material there to inform, to stimulate and even perhaps to amuse. The main sections of the CD are

- A Main plenary presentations** [papers, PowerPoint presentations and discussion]
- B Thematic Working Groups** [reports and output presentations]
- C Inaugural Event** [PowerPoint presentations]
- D Poster presentations** [mainly papers and photos of posters]
- E Other posters and papers** [on a range of topics]
- F The CWG** [introduction and election of new members of the Core Group]
- G Debate and discussion topics** [plenty of issues to stimulate thought]
- H Guidelines for workshop functions** [tools for workshop organisers]
- I Photos from site visits**
- J Some additional photos** [mainly people].

1.4 CWG and the WASH campaign

1.4.1 The CWG

The CWG (the Collaborative Working Group for solid waste management in low- and middle-income countries) traces its origins back to a workshop held in Ittingen in Switzerland in 1995, at which many leading figures and agencies involved in international solid waste management met together to consider the “state of the art” and to plan a publishing programme to meet some of the needs that were identified. The informal organisation that carried these proposals forwards was known as the Collaborative Programme in Municipal Solid Waste Management in Low-Income Countries, and was involved in co-ordinating donor inputs as well as collating and disseminating information.

With the passing of time, this initiative evolved. Some organisations and individuals took on a more prominent role, and others stepped back. With the completion of the publishing programme, the role changed from that of donor co-ordination to one of networking among an informal membership. The network acquired its current name. The CWG came to life when a workshop was being prepared, but faded into the background when the report of the workshop had been circulated. SKAT in Switzerland acted as the secretariat during the periods of activity. For a while a website was maintained by MELISSA in South Africa. By the time of the Dar es Salaam Workshop in 2003, there was a growing desire to find a way to increase the scope of CWG activities. An interim Core Group was formed to steer developments, look for funding, explore links with other groups, and plan the next workshop. By means of funding from Germany and the Netherlands (as mentioned in Section 1.1 above) it was possible to establish a Secretariat at Skat. A programme of activities was developed, encompassing four main fields of activity:- governance, capacity building, networking and knowledge sharing. The CWG joined the Water Supply and Sanitation Collaborative Council

(WSSCC) as the thematic group on solid waste management and participated in the WASH Forum in Dakar at the end of 2004. A website was set up (www.cwgn.net).

This Workshop therefore came at a time when the CWG was growing and changing. A new Core Group, with a wider geographical representation, was an urgent requirement. Action plans needed to be refined and developed. More effective means of advocacy were also essential, not just for more resources to be devoted to solid waste management, but also to ensure that available resources were directed towards approaches that are sustainable, integrated and affordable, and to measures that protect health and bring us closer to achieving the Millennium Development Goals.

More information about the CWG can be found in Part F of the CD.

1.4.2 WSSCC and the WASH Campaign

The Water Supply and Sanitation Collaborative Council was established by a resolution of the UN General Assembly in 1990. The mission of the WSSCC was described in 1991 in these words:

To enhance collaboration among developing countries and external support agencies, so as to accelerate the achievement of sustainable water, sanitation and waste management services for all people, with emphasis on the poor.

It is mainly involved in the following activities

- Providing opportunities for the sector to share concerns and experience, and to establish priorities
- Advocacy & communications
- Convening working groups, networks and task forces on specialist topics, producing tools and guidelines for sector practitioners
- Organising Global forums, and
- Action on the ground – advocacy, monitoring progress and coalition building.

The WASH (Water Sanitation and Hygiene for All) campaign was launched in Bonn, Germany in 2001. It is a concerted advocacy campaign with hygiene in the centre. It contributed to the inclusion of sanitation as a target in the MDGs (WSSD 2002 Johannesburg), and aims to mobilise political awareness, support and action towards achieving the MDGs.

More information can be found in Section E of the accompanying CD.

1.5 Acknowledgements

The list of contributions that result in the success of such an event is bound to be long, and likely to be incomplete. It is the fusion of many efforts and contributions, large and small, that enables the success of such a meeting.

The contributions of financial assistance are particularly appreciated, not only because they enabled the programme to go ahead, and the participation of many with important stories to tell who could not otherwise afford to come, but also because they express confidence in the organisers and appreciation of the objectives.

The organising and preparation of the Workshop, the costs of the venue, and the accommodation and travel costs of many of the participants were financed by contributions from

- DGIS of the Netherlands Government,
- GTZ (the German agency for technical co-operation)
- SDC (the Swiss Agency for Development and Co-operation)

- WSSCC (the Water Supply and Sanitation Collaborative Council)
- Skat (which is also the Secretariat of the CWG), and
- Sulabh Sanitation Movement (India).

In addition, some of the participants were sponsored by GTZ, UN Habitat and Sandec.

ICEF [the India-Canada Environment Facility] / Nav Bharat Jagriti Kendra (NBJK) sponsored the panel discussion during the inaugural function.

The Local Organisers clearly played an important role in the planning, the preparations and the logistics. Particular thanks in this connection go to Professor K J Nath and to Diptarup Kahali, but it is clear that it was a team effort and all of team deserve appreciation.

The Secretariat, Skat, particularly Jürg Christen and Jonathan Hecke, worked long and hard over many months to put the Workshop together. The Core Group provided valuable backup and support during these preparations. Adrian Coad was the thematic co-ordinator.

Rueben Lifuka did an excellent job as moderator, especially in his skilful and amusing chairing of the debates.

It was generally acknowledged that the papers and presentations were of a high standard; the efforts of the presenters in giving of their best are appreciated.

All participants are to be thanked for support and contributions in so many ways – for chairing sessions and discussion groups, for reporting back in plenary meetings, for insightful questions and comments, for help with making arrangements, for flexibility, and for words of encouragement and appreciation which may not cost much but which have great value.

To all of these contributors, and to any who have been missed, on behalf of all participants – a heartfelt “thankyou”.



Children at home on a dumpsite

Taken from the presentation of Sonia Maria Dias

2. The main messages of the Workshop

2.1 Solid waste and health

2.1.1 Introduction

None of the papers was devoted exclusively to the impacts on health of mismanaged solid waste, but many of the papers referred to it, and much of the discussion. In many modern societies mention of the words "solid waste management" immediately suggests "recycling", and it seems that many are unaware that the primary and initial reason for taking care of solid waste is to protect health.

A continuing theme throughout the workshop was the need for advocacy that would motivate decision-makers (i) to devote the necessary resources – particularly expertise and finances – to improving the collection and disposal of solid wastes and (ii) to enlarge their thinking on the subject so that it encompasses all satisfactory options for improving waste management standards. Many participants expressed the view that an increased awareness of the implications for public health would motivate decision-makers to take a new look at solid waste management. These implications are clear and compelling.

Solid wastes are often classified as "hazardous" and "non-hazardous", the latter being wastes of the type that are generated by households, institutions and shops. This classification is misleading, in that there are clearly some very harmful effects caused by household wastes, as the following comments will illustrate. "Hazardous" wastes are generated by industry, agriculture and households as well as by healthcare facilities, though the last source gets more prominence than it may deserve.

Informal sector waste recycling was perhaps the main theme in the Workshop. The informal sector operates outside any benign form of state control, and when this is coupled with the nature of the work, the lack of knowledge of health issues of the people doing the work and the lack of protective clothing used by them, waste recyclers clearly face many serious risks to their health. In addition, other groups are also at risk:

- formal sector waste collectors
- people living near to waste disposal sites, and
- the general public.

Jessica Koehs was asked to note down references made to health in the papers and discussion throughout the workshop, and she has compiled the information that is presented in the rest of this section.

2.1.2 Risks to the health of the general public

- The plagues that ravaged Europe until relatively recently were spread by rats, which proliferate in insanitary conditions. Houseflies, which breed in waste, are a major vector for gastro-intestinal and other diseases that particularly affect young children. Malaria and dengue are spread by mosquitoes that breed in drains blocked by waste and in discarded items that collect rainwater. Outbreaks of disease and plagues have provoked vigorous action and new policies on solid waste management. The aim should be to prevent rather than to react. In paper 58 we read that residents noticed a reduction in the numbers of flies and mosquitoes when a new waste collection service was introduced.
- The Workshop was told of community-based systems that were motivated by a desire to improve community health, either by arranging for the waste to be taken out of the community or by setting up composting and recycling schemes that would improve local health as well as creating employment. In the absence of such schemes, wastes may be burned, causing respiratory disease, left to accumulate so that rats and insects spread disease, or dumped in drains, causing flooding and waterlogging, and polluting water sources [paper 49]..

- A particular risk that threatens the general public, especially low-income groups, is presented by the reuse of syringes, which are salvaged from healthcare waste, washed and repackaged. The high rates of Hepatitis B infection in Bangladesh can be linked to the reuse of contaminated medical equipment, predominantly syringes. This practice can be stopped by upgrading waste management within healthcare establishments [Paper 15].
- The use of good quality compost in food production can impact health by improving nutrition [poster, Kawanga] and by reducing dependence on agrichemicals – fertilisers and pesticides.

2.1.3 Risks to those living close to dumpsites and recycling operations

People living near dumps where burning is a common practice are inhaling smoke which is likely to be high in dioxins, hydrocarbons and other carcinogenic fumes. These gases may cause acute and chronic respiratory problems.

A suggestion was made to undertake a study on the health impacts of burning waste and the downwind inhalation of the smoke and gases – particularly the dioxins and furans released by burning plastics. This suggestion was provoked by the study of a small burning dumpsite in Sohag [Upper Egypt] which showed that 87% of the residents of a village about 300 metres downwind of the dumpsite suffered from respiratory problems [Coffey].

Small smelting operations that process batteries and other metallic wastes can be expected to cause serious local pollution and chronic damage to the health of local residents.

2.1.4 Risks to waste collectors and disposal staff

Upgrading of waste collection methods – often as a result of the involvement of the private sector [paper 47] or the formation of a regional council [poster, Safi] – can result in less risk of injury and infection for waste collection workers. Improved disposal techniques also make landfills safer places in which to work, particularly if toilets with washing facilities are available [WSSCC presentation, Part E of CD].

2.1.5 Risks faced by waste recycling communities

There is a range of opinions about informal sector activities in waste recycling, and most viewpoints were represented at the Workshop. Some would argue that waste picking should be banned because of the health risks associated with it. Others, not bothering to mention the fact that it would be very difficult to stop waste picking in many countries without resorting to considerable force, reply that not having food to eat is also bad for the health, and that waste picking provides a safety net for those who would otherwise have no means of earning enough to survive. Here are some of the points raised at the Workshop.

- Waste pickers often suffer from tuberculosis and other respiratory diseases, cholera, diarrhoea, malaria, parasitic diseases, dermatitis, gastric problems, pregnancy complications and many other diseases related to handling and living with waste, and the lack of hygiene facilities. Flies and mosquitoes are also prevalent in their communities.
- Back problems, skeletal and muscular damage, are caused by lifting or hauling heavy loads, often in unsatisfactory containers or carts.
- In many countries, improper at-source segregation of healthcare products causes disease and injury for waste pickers. [For example, in some communities it is common to find piles of syringes and IV tubes that have been segregated for reuse.]
- Many other injuries are caused by the lack of protective clothing. For example, paper 34 mentions that a study in Argentina showed that one third of the 10 to 14 year-olds picking waste at dumpsites had been hurt while working.
- Waste picker communities often lack access to health services. (In one case that was mentioned, pregnant waste picking women in labour had to ride on the back of a garbage truck in order to reach a clinic where they could give birth.)

- The lack of sanitation facilities is common in waste picking communities, resulting in open defecation and increased disease transmission.
- Major health problems result from storing and sorting waste in homes.
- All of these illnesses and health risks are especially serious for children. Child labour is prevalent among waste picking communities. Waste picking affects these children physically, mentally and emotionally and denies them their basic human rights. In one presentation it was suggested that waste picking be listed by the IOL as the "worst form of child labour"

Several suggestions were made by presenters regarding improving waste pickers' health conditions. Many were concerned with upgrading the status of waste pickers, presumably so that they would have better access to information about health impacts and more income to spend on improved living conditions. Some suggestions included the provision of equipment or cash subsidies, but such donations would be hard to control without a register of eligible people and proof of identity. Nevertheless, real progress has been made in some countries, notably Brazil [paper 11] in improving the working conditions for waste pickers, and child labour has been reduced in India [paper 33] and Argentina [paper 34] as well as in Brazil. An NGO in Delhi is able to report improved health among waste workers, following efforts to upgrade working and living conditions [paper 33].

The problems posed by waste electronic and electrical equipment are growing alarmingly as computers and mobile phones are purchased and discarded at an accelerating pace. Modern electronic equipment uses a wide variety of metals, some of which are toxic whilst others are particularly valuable. Large quantities of electronic waste are being shipped to low-income countries for recycling. The difficulty of separating electronic components into their constituent materials adds to the hazards. More information is available on the CD in Part A [paper 35], Part D [poster-Ramesh] and Part E [Informal evening session – Rodrigues].

2.2 Solid waste management and the Millennium Development Goals

2.2.1 Introduction

In September 2000, the Millennium Declaration was ratified by 189 heads of state at the United Nations Millennium Summit. The Declaration outlines eight broad goals. Within these are eighteen targets – most set for 2015 using 1990 as a benchmark – and forty-eight indicators. These Millennium Development Goals represent a global commitment by all nations who signed the Declaration to reduce poverty and improve lives [BBC].

Many of the presenters at the CWG Workshop explained how the initiatives that they were describing tied in with the Millennium Development Goals [MDGs]. At the request of the organisers, Anne Scheinberg was looking for links between solid waste management and the MDGs. Her PowerPoint presentation can be found in Part E of the accompanying CD. A summary of her findings, linked with excerpts from the MDGs and additional observations, is presented below. At the end of this section are some more general comments. Reference is made to papers that provide examples or discuss a point in more detail.

Solid waste management is not mentioned explicitly in the Goals, Targets or Indicators, but the following observations demonstrate clearly that the right approach to solid waste management can produce significant progress towards achieving many of the Goals. [The references to the Millennium Development Goals are based on a summary found on the World Bank website < <http://info.worldbank.org> >.]

2.2.2 Links to specific Goals, Targets and Indicators

Goal 1 Eradicate extreme poverty and hunger

Target 1 Halve, between 1990 and 2015, the proportion of people whose income is less than a dollar a day.

- Indicators
1. Proportion of population below \$1 per day
 2. Poverty gap ratio (incidence x depth of poverty)
 3. Share of poorest quintile in national consumption

Target 2 Halve, between 1990 and 2015, the proportion of people who suffer from hunger.

- Indicators
4. Prevalence of underweight children (under five years of age)
 5. Proportion of population below minimum level of dietary energy consumption.

In many countries, significant proportions of the urban populations are involved in recycling – collecting from houses and businesses discarded items that they can sell, sorting through mixed wastes and taking out materials and items that can be sold, washing and sorting these salvaged recyclables and processing them into raw materials that can be used by others, or manufacturing new products. The production of compost from organic waste also provides employment. If such options were not open to them, tens of thousands in each of many of the world's largest cities would have no income and no means of supporting their families. One consequence of the economic crisis that struck Argentina in 2001/2 was that many who lost their jobs were able to survive by recycling solid waste [paper 34]. Not all recycling workers earn very low incomes – some recycling workers in Mexico earn ten times the minimum wage [paper 10].

However, it must be said that many of these activities take place quite independently of formal solid waste management systems. Good solid waste management systems can improve the incomes of waste recyclers by operating in such a way that the proportion of material that is recycled is as high as possible and as uncontaminated as possible [so that health risks to waste recyclers are as low as possible]. This involves promoting at-source segregation in homes and offices, keeping hazardous industrial and healthcare wastes [paper 15] out of the general domestic and commercial wastes, and planning collection services such that recyclers have access to the waste. Policies, contracts and mechanisms can include consideration of the needs and activities of the informal sector.

Other steps can be taken to improve the working conditions and earning potentials of waste pickers. If hostility and harassment can be reduced [Chaturvedi, Section 3.3.7] and the status and synergy of the recycling workers can be improved [paper 11], much can be done to enable people without formal employment to escape from extreme poverty. A study into the economic impacts of informal sector waste recycling is being planned by GTZ¹.

Further opportunities for employment are provided in waste collection, as municipalities, NGOs and community groups work to extend collection services to all of the urban populations. In many areas this work is labour-intensive because access to houses in traditional and unplanned areas is too restricted for motor vehicles, because labour-intensive methods are cheaper or more reliable, or because of a deliberate policy to favour employment generation.

¹ The study is being co-ordinated by Sandra Spies [Sandra.Spies@gtz.de]

Manual jobs in solid waste management are largely open to any who wish to work in this way, without requiring specific skills or training, so recycling and house-to-house collection provide opportunities for many to earn more than one dollar a day, thereby contributing to achieving Millennium Development Goal 1.

Goal 2 Achieve universal primary education

Target 3 Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Indicators 6. Net enrolment ratio in primary education
7. Proportion of pupils starting grade 1 who reach grade 5
8. Illiteracy rate of 15-24-year-olds

It is unfortunately true that many children work with their parents on waste disposal sites to recover materials for recycling. However, steps that are being taken in, Brazil, Delhi and Argentina to encourage children to attend school were presented in three papers [papers 11, 33 and 34]. Even if it is not possible to eliminate child labour on the disposal sites, it may still be possible for children involved in this work to attend school, since the working hours are usually very flexible, and families involved in this work remain on one location rather than travelling from place to place, as they might if looking for casual work. If the productivity and earning power of waste pickers is improved, parents have less need of the labour of their children.

Goal 4 Reduce child mortality

Target 5 Reduce by two thirds, between 1990 and 2015, the under-five mortality rate

Indicators 13. Under-five mortality rate
14. Infant mortality rate

Diarrhoea is a major killer of young children. One transmission route for this class of diseases is the housefly carrying microbes from faeces to food. Houseflies breed in piles of rotting garbage. Good solid waste management – storage of waste in containers, removal at a frequency of at least once a week, and effective disposal – is effective in reducing the numbers of houseflies and therefore reducing the spread of diseases that kill young children.

Goal 6 Combat HIV/AIDS, malaria and other diseases

Target 8 Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases.

Indicators 21. Prevalence and death rates associated with malaria
23. Incidence of tuberculosis (per 100,000 people)

The mosquitoes that spread malaria, dengue and other diseases breed in stagnant water that may be there because of inadequate solid waste management. Because of insufficient storage for waste, irregular collection, or low levels of public awareness, waste often ends up blocking drains, forming areas of stagnant water in which mosquitoes lay their eggs. Discarded containers and tyres that are left in the open may also collect rainwater in which mosquitoes can breed. Good management of solid wastes can deny mosquitoes the breeding locations which they need and so cut down the incidence of mosquito-borne disease.

As discussed in Section 2.1.3 above, smoke from burning waste is a cause of respiratory disease, and may be a contributory factor in the spread of Tuberculosis. Infected dust may also contribute to the spread of this disease, and poor disposal of sputum cups from TB

clinics and wards may be another means of transmission. Good solid waste management can therefore be expected to contribute to the improvement of Indicator 23.

Goal 7 Ensure environmental sustainability

Target 9 Integrate the principles of sustainable development into country policies and programmes and reverse the losses of environmental resources

Indicators 25. Proportion of land area covered by forest
27. GDP per unit of energy use (as proxy for energy efficiency)
28. Carbon dioxide emissions (per capita)

Target 10 Halve by 2015 the proportion of people without sustainable access to safe drinking water.

Indicator 29. Proportion of population with sustainable access to an improved water source.

Target 11 By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers.

Indicator 30. Proportion of people with access to improved sanitation.

There are many links between solid waste management and environmental sustainability. Wastes that are disposed of in unsatisfactory ways cause pollution and degradation of resources. Sanitary landfilling provides a means of disposing of waste that greatly reduces the environmental impacts, compared with dumping and open burning. Measures to reduce quantities of waste requiring final disposal [waste avoidance and recycling] can prolong the lives of sanitary landfills, further reducing the burden on the environment. Environmental benefits are also obtained by pretreating wastes to reduce their potential to cause pollution. Increased practice of at-source segregation, improved methods of sorting waste and of reprocessing recovered materials [including composting] can also dramatically improve environmental sustainability, especially in sensitive urban areas. Country policies should be based on measures that have been shown to deliver the required results, not on ideas taken from other countries where conditions and opportunities are very different.

Indicator 25: Forests. The impact of good solid waste management on this indicator can only be modest, but it is, nevertheless, worth mentioning. Paper and other fibres that are recycled to make paper reduce the demand for virgin pulp and so fewer trees must be cut down for paper making. Anaerobic digestion of biodegradable solid wastes produces biogas which reduces the demand for firewood for cooking. Compost made from solid wastes has been shown to increase the survival rate of seedlings in tree planting campaigns. Currently, the contributions are small, but more could be done.

Indicator 27: Energy efficiency. The use of recycled materials in some production processes requires much less energy than if raw materials are used. This is especially true of glass and aluminium, when long transport distances are not involved. Recycling and decentralised composting [paper 72] save on the energy used for transport, which can be significant where disposal sites are at a considerable distance.

Indicator 28: Carbon dioxide emissions. The main concern with regard to carbon dioxide is the greenhouse effect which is resulting in global warming. However, methane, which is produced by the decomposition of biodegradable wastes in the absence of oxygen, is 21 times more effective in causing this threatening greenhouse effect than carbon dioxide. Consequently, converting methane to carbon dioxide is equivalent in its impact on global warming to the removing of 20 times the amount of carbon dioxide. Measures that convert methane to carbon dioxide in sanitary landfills and that promote composting processes that do not produce methane are therefore having the same effect as reducing carbon dioxide

emissions, and this is why the Clean Development Mechanism [CD-C, inaug-3] promotes such measures.

Indicator 29: Water sources. Water resources that are suitable for potable supplies are being reduced by pollution. An obvious example of this is given in paper 49, which describes waste directly polluting a lake used for a town's supply. Less obvious pollution is caused by polluted water from large uncontrolled disposal sites that finds its way, sometimes taking decades to do so, into underground and surface resources. The disqualification of water sources in this way makes it harder to achieve Target 10. Good solid waste management can prevent this cause of the loss of water sources.

Target 11: Improvement in living conditions in slums. Slums tend to be ignored by conventional waste collection systems for three reasons:

- If the dwellings do not have official authorisation and the residents do not pay local taxes, waste collection and sweeping services may be denied by the municipality as a matter of policy;
- If the access ways to the houses are narrow, tortuous or unpaved, municipal vehicles may not be able to reach most of the houses and there is no room for large containers;
- The waste is likely to have less value for recycling and so the collection crews prefer to go to parts of the city where they can get higher value waste and additional payments from the residents.

In addition to these problems, lack of tenure does not encourage the residents to invest in sanitation improvements, including toilets and drains, solid waste services and paving of alleys. The lack of space for treatment or even storage of waste results in very unpleasant conditions; often waste is dumped into drains, causing flooding and other serious threats to health. There are clear opportunities for unconventional waste collection services, either provided by the informal sector or small formal enterprises, by NGOs or by community organisation. Solid waste collection services can be provided for a relatively low capital outlay, and may have some positive impacts that reach beyond the removal of waste, such as

- encouraging further community action, leading to other improvements;
- providing jobs for local people, as waste collectors or in recycling;
- persuading municipal authorities, NGOs or donors that this is an active community that merits further support.

Willingness and ability to pay are crucial issues in slum community, and paper 27 provides a reminder that initiatives must be demand-led and planned with the full involvement of the slum-dwellers.

Indicator 30: Improved sanitation. Sanitation concerns the protection of health and works by the removal and safe disposal of wastes. The word "sanitation" is often used to refer only to excreta disposal, but this alone, without the removal of surface water [whether polluted or not] and solid wastes, will not create a healthy and clean environment. The links between solid waste and the proliferation of flies, mosquitoes and rats have already been discussed in Section 2.1 and in connection with Goal 4, showing clearly that good solid waste management is a component of sanitation and vital to the protection of health. There are other links. One is that drains that are designed to remove wastewater and standing water quickly become ineffective if blocked with solid waste. It is not enough to provide drains – steps must be taken to ensure that solid waste does not block these drains. Another link is that piles of waste encourage open defecation; if there are no piles of waste there is more chance that people will look for a more sanitary place to use as a toilet. If houseflies have easy access to faeces because of the lack of good toilets, it is even more important to reduce the breeding of flies through good solid waste management.

In addition to the reduction of disease, improved sanitation also affects the way that people feel about themselves and their community. Improvements in sanitation [the management of

excreta, solid waste and wastewater disposal] encourage people to make other improvements to their homes and surroundings.



A storm drain in a slum community that is almost solid with solid waste

Goal 8 Develop a Global Partnership for Development

Target 16 In cooperation with developing countries, develop and implement strategies for decent and productive work for youth.

Indicator 45. Unemployment rate of 15 to 24 year olds

The opportunities for creating employment within solid waste management have already been discussed in connection with Goal 1. It is appropriate at this point to discuss the words “decent” and “productive”. Many would react immediately to the suggestion that any work in solid waste management can be decent. The work of a waste collector pushing a cart from house to house can indeed be described as decent. With a well-designed cart that does not require skin contact with the wastes, wearing a uniform, with a steady income and having personal contact with residents, the work is decent. Such jobs are increasingly being provided by community-based collection systems, private companies and municipal authorities. The work can be productive too. Recycling creates employment and turns waste, which is regarded by many as a liability, into an economic good – materials that can be traded and used to make saleable products. Cleaning waste off the streets and vacant lots and providing a regular waste collection service can increase the value of the houses in that area. Good solid waste management can generate decent and productive work.

2.2.3 General comments

Some people may be less than enthusiastic about the MDGs because they believe that such declarations and campaigns are just words and phrases used by diplomats and executives of international organisations to give themselves the feeling that they are achieving something, when, in fact, nothing changes on the ground. This caricature ignores that fact that the MDGs are being used to shape the policies and spending plans of international organisations and donors, that these organisations are selecting proposals on the basis of how they relate

to the MDGs. It follows that relevance to the MDGs is an important criterion that should not be ignored when proposals are being developed.

Another criticism of the MDGs and similar declarations and targets is that they tend to concentrate on the installation of hardware rather than the improvement of people's lives. However, one look at the indicators shows that the focus is on indicators that have a direct relationship to living conditions and quality of life, rather than being concerned only with statistics on installation of hardware.

Waste picking and recycling are clearly linked to the MDGs in a number of ways, and so it is necessary to identify trends and practices that threaten these activities and to modify them so that they no longer have a negative impact on recycling opportunities. It is also important to look for ways of increasing the scope and improving the productivity of these activities, and of upgrading the status and living and working conditions of those involved, and also to reduce the involvement of child labour. In many countries waste picking and recycling provide important income generation opportunities for women.

Composting can contribute to the MDGs by providing work and promoting food security. It seems unlikely that the funding offered by the Clean Development Mechanism as currently practiced can contribute significantly to the development of small-scale decentralised composting in the immediate future, so other ways should be found to overcome the sustainability challenges presented by local composting, or the CDM must be adjusted.

2.3 Other messages from the Workshop

This section reflects some other issues that were presented and discussed at the workshop. It does not claim to be a comprehensive coverage of all themes, but is the personal recollections of the editor.

2.3.1 Motivation and direction

The terms "motivation" and "driving force" were heard in a number of contexts:

Is the driving force for improving solid waste management the desire to reduce environmental pollution or to reduce the risks to health? One of the debates was concerned with whether we have the balance right between these two goals. Or is our main motivation to improve the living conditions and social status of informal sector workers, or is it to provide an economical service with 100% coverage? What is the motivation for setting up co-operatives and recognising waste pickers as useful members of society? Is it a desire to improve their lives or to bring them under control?

a) Hearts and heads

On several occasions mention was made of the importance of touching the hearts, not just the minds. In one of the inaugural addresses, the phrase "[having] people . . . in their hearts" was suggested to be a requisite for leaders who are working to introduce sustainable development [Gourisankar Ghosh]. The next day we heard about an awareness campaign in Brazil that used a picture of a girl on a waste dump to touch hearts and emotions and motivate people to take action [paper 11]. Later we heard a plea that educators should not just inform the minds of their students but to inspire in them to feel "compassion for the human condition" and be motivated by "qualities of heart" [paper 67]. Some of the presenters and other participants presented their viewpoints with passion. However it is important to distinguish between a motivating compassion for the people we are trying to help and irrational or emotional thinking that ignores the facts. Our intellects must be informed, challenged and used. Perhaps there

is some validity in the analogy that our efforts should be like a car that is steered and controlled by the intellect, but powered by the heart.

b) Objectives

As we move down the chain from planning to implementation, the focus can change from objectives to results, so that the ultimate objectives are put aside in the effort to achieve selected results and indicators. The example is given in Paper 27 and its discussion of a funding agency being concerned with poverty reduction and environmental sustainability, but the NGO that was implementing the project was more concerned with numbers of participants and tangible outputs, presumably because the terms of reference of its contract with the funding agency were concerned with such indicators. As a consequence the important issues of capacity building, ownership and institutional memory were left aside.

2.3.2 Reaching decision-makers

There were frequent references to raising awareness of, and priority accorded to, solid waste management, particularly among leaders and decision-makers. This is a need that is often mentioned, but there seems to be little experience of doing this. It was suggested that the CWG makes contract with national and international networks of mayors. In Bangladesh a conference for mayors on the topic of solid waste management was being planned. The longevity of initiatives in solid waste management is often constrained by politics, but the Waste and Citizenship Forums in Brazil seem to have lasted considerably longer than the rule of any particular party in local politics [paper 11].

2.3.3 Differences in perspectives and opinions

a) Avoiding polarisation regarding the informal sector

There were varied and strongly held convictions (clearly involving the emotions) regarding the informal sector. As a result there were some robust verbal exchanges and some powerful body-language, though apparently no physical violence. Though no-one at the workshop claimed to have earned their living as a waste picker, some of the participants identified themselves very closely with waste pickers, had sorted waste with them and were clearly familiar with their hopes and dreams. There were some very different attitudes to informal waste picking, as can be seen from some of the questions asked after the presentation of papers. Some participants seemed to regard the livelihood and well-being of the waste pickers as the centre of solid waste management. Others put environmental or health concerns at the centre, while others still focused on the need for reliable and economical services that reach all of the urban population. Some remarks suggested that waste picking on disposal sites was a problem that should be eradicated, while others seemed to suggest that it would be wrong to upgrade an uncontrolled open dump into a sanitary landfill because it would displace the waste pickers who work there, even if their fires are currently causing life-threatening disease to those working on the site and living in villages downwind.

We talk easily of working with the informal sector and integrating them into new waste management systems, but evidence from Brazil, India and Egypt indicates that many waste pickers value their independence and find it difficult to work within the institutional structure of a co-operative or contractor [papers 11 and 80]. Some are reluctant to trust others and to work regular hours at the instruction of a supervisor. Perhaps the best approach is to integrate the informal sector into solid waste management **policies** [paper 35], rather than seeking to integrate informal sector workers into formal sector operations.

The whole dilemma was cleverly packaged in a question raised in the context of the Millennium Development Goals, and the list of targets to be achieved by 2015:

Do we want to halve or double the numbers of waste pickers by 2015?

Those who see waste picking as unacceptable, either because of the working and living conditions suffered by these people or because of the environmental pollution and obstruction of operations caused by some informal sector recycling activities, would clearly see progress in terms of a reduced number. They would like to halve the number by 2015. On the other hand, there are others who regard waste picking as a valuable lifeline for the unemployed – allowing them to earn enough to live on and giving them a considerable degree of autonomy – and as effective in reducing the depletion of natural resources and the amounts of waste dumped or landfilled. Such people would presumably like to see the number of recycling workers double. How do we define progress?

The anticipated polarisation of views on informal sector waste pickers could be seen in the alternatives mentioned in titles of three of the papers about informal sector recycling:

- “. . . poor victims or waste management professionals?”
- “. . . efficient part of a system or marginal and disturbing way of survival for the poor?”
- “embracing, not displacing”.

b) Another controversial issue - landfills

Another polarisation was evident in attitudes to sanitary landfills. Some participants seemed to regard them with considerable hostility, seeing them as a cause of many difficulties to the informal sector and as diverting attention from recycling, while others believed that an acceptable means of disposing of waste that is not currently being recycled is urgently needed, to avoid or reduce serious environmental and operational problems such as open burning. Some contracts are written in a way that encourages the landfilling of waste; this is done so that waste is not dumped in unauthorised locations. However, apart from such cases in which there is a financial incentive to send all waste to a landfill, even the most ardent advocates of sanitary landfilling would be pleased to see more waste recycled and less requiring disposal, provided that the recycling itself does not produce significant pollution. Some recycling practices do cause serious environmental pollution, even if the environmental gains from resource reuse and savings on transport are taken into account. An example of such unacceptable practices is the open burning of tyres to get a small amount of steel wire.

It is worth noting that in Brazil they are working for both more sanitary landfills and improved conditions for waste pickers [paper 11]. There is no conflict here.

c) One reason for these differences

One reason for the existence of strongly divergent opinions at an international conference or workshop is that there are large differences around the globe in many factors that affect the suitability of particular options and approaches. Therefore, when two workshop participants appear to be arguing for opposites, there may in fact be a large amount of common thinking between them. The differences arise because of the differences in the situations that they have in their minds when they are speaking. There may be significant divergences in social and economic factors, in the institutional and political environment, in the support available from NGOs, in the access to dealers in recyclables and to reprocessing industries, and in the nature of the waste itself.

2.3.4 Integration

The word "integrated" is widely used these days in connection with solid waste management. It is employed to refer to the integration of stakeholders, aspects and elements in the ISWM methodology [see www.waste.nl] or the integration of stakeholders, stages and impacts in the report of the 5th CWG Workshop in Manila.

There is also an urgent need to integrate into our thinking the concerns of diverse waste management specialists so that we all understand and take into account the concerns of our colleagues, who come from a range of backgrounds and disciplines. There is a danger that workshops and conferences are polarised, so that only one viewpoint on an issue is heard at each event, resulting in a reinforcing of prejudice rather than a more integrated and global understanding or approach. Efforts that were made by the Secretariat to invite participants from a range of backgrounds should be applauded.

We need to integrate objectives. With regard to the informal sector, support for their operations may conflict with environmental goals, if simple recycling methods cause unacceptable air or water pollution. Involving the informal sector in waste collection may conflict with the goal of giving all citizens a regular service, if waste collectors with a background in the informal sector are accustomed to working when they like, rather than starting at an agreed time and finishing the day's work, or if they are accustomed to collecting waste only from those who give tips or who generate more valuable waste.

Given the diversity of opinion in some areas, the question arises as to whether there should be a document that defines which issues form the core of the approach that the CWG advocates, and are therefore non-negotiable, and which issues can be treated differently by different members of the group without causing alarm among some members. As long as the CWG is largely a forum for discussion, there is no need to have a clear policy and approach. However, if we are to become more involved in publishing and promoting a recommended approach in major aspects of solid waste management, we may need to determine our lowest common denominator and not publish material that contradicts these fundamental ideas. (This makes the CWG sound too much like a religious organisation, but there may be some parallels!) An alternative approach would be to require that all publications that will bear the name of the CWG are reviewed and accepted by the Core Group before they are published. [please refer also to chapter 5.3]

2.3.5 The Clean Development Mechanism

A number of participants mentioned the Clean Development Mechanism (CDM) which comes from the Kyoto Protocol and rewards the reduction of greenhouse gases with a payment proportional to the reduction of these gases that is achieved. Since the capture and utilisation or burning of landfill gas, and aerobic composting, both reduce the release of methane into the atmosphere, there is scope for rewarding these processes with payments. Presentations [ppt-3 and paper 72] and plenary discussion touched on the options, but also suggested that there are a number of regulations and restrictions that may limit the impact of this initiative in some circumstances, make its application complex to administer, and limit this option to large systems. There is no doubt that we shall be hearing more of the CDM in the coming months and years.

2.3.6 Municipalities cannot be ignored

The importance of the people in the municipalities who are involved in solid waste management was mentioned in a number of contexts.

- In towns and cities where the solid wastes are collected and disposed of by municipal teams, there is an obvious link between the understanding, skills and motivation of municipal officials and the quality of the

service that is provided. In many urban areas the needs are obvious – equipment is unsuitable, poorly maintained and underutilised, disposal standards could sometimes be described as deplorable, accounting systems are grossly inadequate, and no thought is given to developing public awareness and co-operation. Clearly the urgent need in such cases is to improve the capacity of the municipal staff.

- The attitude of the municipalities towards informal sector workers has major impact on the lives of those who live from recycling. The positive attitude of many cities in Brazil has resulted in an impressive growth of associations, improved status and self-image and effective recycling [paper 11], but in other situations waste pickers are forced to pay protection money to municipal officials [paper 19] and are harassed by police.
- Community-based waste management systems often try to operate in isolation from the local municipal authorities for a variety of reasons, but there is evidence that sustainability requires integration between community systems and the local municipality [paper 72]. Municipal officials may be too bureaucratic or unable to adjust to new realities, and leaders of community schemes may mistrust municipal authorities, wish to retain full authority or stay independent of the municipality for political reasons. The success of community-based collection and recycling schemes depends very much on links with municipal authorities. A common problem is that waste that is brought to a transfer point by a community-based primary collection service is not picked up and taken for disposal by the municipal authorities. One solution to this problem is to compost and recycle the waste locally, but often such initiatives require an allocation of land, equipment or other resources from the municipality. In other ways municipal support is also important, perhaps as official recognition, or in providing technical advice [paper 72, 73].
- Private sector participation depends very much on the role played by municipal officials, in granting and policing licences to franchisees, in selecting, monitoring and paying contractors, and in upholding contract agreements and monopoly rights.
- Cost recovery is usually in the hands of municipal officials. Even in the cases where private sector service providers collect fees directly, they still require the official backup of municipalities, to encourage generators to pay and to take action when they do not. Paper 18 clearly illustrates the impacts of communication with the public and committed municipal leadership on the collection of waste management fees. The selection of cost recovery for one of the Thematic Working Groups and for the topic for the first debate [Sections 3.3.6 and 4.4], and the questions raised in discussion show that cost recovery is an important issue.

Capacity building of municipal officials is, therefore, clearly vital.

Capacity building includes the development of an enabling environment [Section 4.3.3]. One aspect of this enabling environment is the staffing and employment policy of national and municipal authorities. If municipal officials are regularly transferred from one department to another, there is little motivation to improve knowledge and skills in any particular field. This lack of motivation suggests a fact that is crucial yet often ignored – it is not the need for training that is important, but the demand. Needs can be very obvious to outsiders, but if there is no demand for training from within, the results will be that the people that need training do not attend the training courses that are offered to them, or they do not take them seriously. There may be no demand from the municipal waste managers themselves or from their superiors. Networking is a powerful tool for raising the status of waste management and for increasing understanding and motivation, but if municipal officials are not allowed time off for networking activities, are not given transport allowances to attend meetings, or have no access to internet sites, the opportunities for networking are reduced. The records indicate that only four of the participants at the Workshop were municipal employees, in spite of the efforts of the organisers to achieve a wider representation.

One of the problems leading to a lack of capacity at municipal level may be the lack of interest and involvement at national level. As discussed in Section 3.3.6, the debate motion that attracted the most votes blamed the lack of co-ordination and responsibility at national level for the inadequacies of solid waste management. This topic was not selected for debate because there were too few speakers against the motion – almost all the speakers were convinced that this is a major problem. This lack of involvement at national level has a

clear impact on the lack of an enabling environment at local level. A national-level structure could impose requirements, co-ordinate training, encourage and facilitate networking and make possible a career structure in which promotion would lead to increasing geographical areas of responsibility. The water sector in most countries has a clear national-level leadership, and the benefits of this are clear when comparison is made with the solid waste management sector.

What is the CWG doing to motivate and assist municipalities to improve their management of solid waste management activities? What should be done? Since the CWG includes all who wish to be associated with it, all of us should be asking what we can do and how other CWG partners can assist us.

2.3.7 Spreading the news

Some of the Thematic Working Groups expressed the view that there is already enough printed information on some topics, but that it needs to be disseminated more effectively. This suggests that the initial publishing programme of the Collaborative Programme was successful and well targeted, but that the publications that were produced have not always reached the right people. In the case of the Strategic Planning Guide, there were projects that were designed to demonstrate its application, but there appears not to have been such a clear dissemination strategy for the other publications. Publications have been distributed to CWG members – mainly to development organisations, NGOs and training institutions, and also to participants on training courses, but there is no information about whether they have been read and applied. Publications that are sold at European prices cannot be afforded by public sector officers in low-income countries.

Some of the papers describe the weaknesses and shortcomings of projects, as well as the successes [for example, paper 27]. This is welcome, and it is to be hoped that there will be increasing opportunities for presentation and open discussion of project concepts and modalities. If it is possible to talk and write freely about difficulties as well as successes, we will be able to learn from disappointments, and the lessons from disappointments are often more powerful and helpful than the account of an easy success.

We hear of the same problems and omissions again and again. It therefore appears that the process of information dissemination needs to advance on three fronts:

- Increasing the demand for information. One can lead a horse to water but one cannot force it to drink. In the same way there is no benefit in providing information to people who will not read it and who do not think that it will help them. The need for better information may be obvious, but this need must be translated into a demand.
- Enhancing the accuracy and impact of the information. The information that is disseminated needs to be based on experience and should comprise honest accounts of experience, mentioning difficulties and opposition, being transparent with regard to external inputs and dependencies, and giving comprehensive assessments of sustainability.
- Improving the method of dissemination so that the information goes to the people who want it, in a form that they can use and at a price that they can afford.

He has the right to criticize who has the heart to help.

Abraham Lincoln [contributed by Ljiljana Rodić-Wiersma]

3. The Workshop process

3.1 Selection of papers and participants

3.1.1 Selection of papers

Over 80 proposals for papers were received. The main criteria that were used for the selection of papers were:

- Subject matter – the papers were required to demonstrate their relevance to the theme of the Workshop. Proposals that were more concerned with water supply and sanitation, or that were more about technology than about impacts on health and the MDGs were declined.
- Proven experience – In solid waste management there are many novel ideas and approaches that appear to have a good chance of being successful, but often they fail to be sustainable because of the complexity of solid waste management, with its many stakeholders and aspects. Therefore, in general, papers were rejected if they could not demonstrate a track record that indicated at least a degree of sustainability.
- First-hand experience – Proposals were considered unsuitable if the authors appeared not to have a close familiarity with the activities and initiatives being discussed, because of the benefits of being able to discuss and reflect on wider, related issues during the discussion of the papers and in other parts of the Workshop programme.

Other factors also entered into consideration, such as the quality and clarity of the proposals and papers, and the applicability of the experience to be presented to a wider context. In spite of the care taken in selection, it is still possible that some good presentations were lost to the Workshop. An additional opportunity of presenting papers that could not be fitted into the plenary presentation programme was afforded by the option of presenting posters, as discussed further in Section 3.3.7, but unfortunately some presenters were disappointed not to be offered the chance of presenting their papers in a formal way, and as a result did not participate in the Workshop. Most of the papers for plenary presentation were available on the CWG website (www.cwgnet.net) before the Workshop.

To avoid confusion caused by the use of two numbering systems and the inevitable alterations to the programme, the numbering system that developed as the proposals were received, was retained throughout, and the abstracts in Chapter 4 and the papers on the accompanying CD use that original numbering system. There is no indication of priority or thematic sequence in the numbers assigned to the papers; they reflect only the sequence in which proposals were received.

3.1.2 Selection of participants

Participation in the Workshop was not on the basis of applications, but was by invitation. The general criteria for selecting participants were to invite:

- presenters of papers that had been accepted;
- representatives from the full range of organisations – public sector, private sector, informal sector, NGOs, consultants, academic etc. – so that all sectors are represented;
- nationals from a wide range of countries,
- people with considerable experience in solid waste management.

In addition, all participants were required to be fluent users of English

The list of participants in Section 5.1 shows that the use of these criteria and the availability of funds to sponsor participants enabled the gathering of a group that was diverse in the ways indicated in the list above, and also able to share from proven experience.

3.2 Preparations before the Workshop

The preparations for the workshop involved extensive activities, which began at the previous workshop in Dar es Salaam in 2003, where participants discussed the theme and concept of the next workshop. The linking of the CWG with the WSSCC had a major impact on the theme and location of this workshop, as these issues were discussed by Core Group members and others at the WASH Global Forum in Dakar, Senegal at the end of 2004. As the call for papers went out the venue was decided on and the local organising committee (which is a major factor in the success of a workshop) was established. Vast numbers of e-mail messages were sent (unfortunately not all of them arriving) with questions, suggestions, responses, information, papers and guidelines. Contacts were established with donors and NGOs which had funded CWG workshops in the past, as well as with other agencies and offices which were known to be active in the sector, with the aim of attracting financial support which would enable the participation of people who could not sponsor themselves.

Guidelines for the preparations of papers, presentations and posters were sent to authors. These guidelines, and some others used for the Workshop, are available in Part H of the CD.

It has always been the concern of the organisers of CWG events that they be workshops rather than conferences. Workshops are characterised by placing less emphasis on the presentation of papers and more on interaction between participants, by generally having smaller numbers of participants than conferences, and by seeking to develop particular outputs. With this in mind, the time allotted to the presentation of papers was kept below half of the time, and Thematic Working Groups were planned as the main vehicle for interaction between participants and the development of outputs. Topics for these working groups were proposed before the Workshop and participants were invited to select the group that they would like to be involved in. Using an e-mail response form, five Thematic Working Groups were selected. More details are given in Section 3.3.4.

At the same time as intending participants were asked to indicate their choices of working groups, they were also asked to review a list of potential debate topics and rank them according to their preference, indicate whether they would be willing to speak for or against any motion, and suggest additional motions. The debates are presented in more detail in Section 3.3.6 and some of the points made are mentioned in Section 4.4. Participants were also asked to propose and vote on topics that should be discussed at the Workshop. The two most popular topics are listed in Section 4.5, and a full list of topics, together with comments that were written in response to some of them, can be found in Section G of the CD.

3.3 The Workshop programme

3.3.1 Outline of the programme

A brief summary of the sessions can be found in Sections 3.3.2 to 3.3.7. Papers and PowerPoint presentations listed in the fourth column can be found on the accompanying CD.

Day 0		Inaugural event and welcomes		Wednesday 1 February	
Time	Topic	Presenter	more . . .		
16.45	Musical prelude, lighting the lamp, offering flower bouquets to the distinguished guests				
16.50	Welcome address	Prof. K.J. Nath, Local Workshop Co-ordinator			
16.55	Introducing the CWG: the history and development of the CWG network	Jürg Christen, on behalf of the CWG Secretariat & Core Group	Inaug-1		
Day 0		Inaugural event and welcomes [continued]		Wednesday 1 February	

Time	Topic	Presenter	more ...
17.05	Introduction to the thematic focus, objectives and philosophy of the Workshop	Adrian Coad, thematic co-ordinator of the Workshop	Inaug-2
17.15	Introducing the WASH Campaign and the relevance of improved SWM to achieving its objectives	Ms. Carolien van der Voorden, WSSCC, Geneva	
17.20	Address by Guest of Honour, Chancellor, Sulabh International Academy of Environmental Sanitation, New Delhi	Dr. Bindeshwar Pathak, Padmabhusan	
17.35	Inaugural Address by the Honourable Minister for Public Health Engg & Housing Depts, Govt. of West Bengal	Sri Gautam Deb, read in his absence	
17.55	Keynote Address: Solid Waste Management: What went wrong? Potential options for improved management	Saul Arlosoroff: representing WSSCC	Inaug-3
18.25	High tea		
19.15	Panel Discussion: The situation of solid waste management in India Panel: Mr A Mukherjee, UN Habitat Mrs. Almitra Patel, member of Supreme Court Committee on SWM Mr. Shughagato Dasgupta, Senior Urban Specialist, Water and Sanitation Program-South Asia, New Delhi, India Dr. N.B. Mazumdar, Consultant, TERI, India Habitat Centre, New Delhi, India Mrs. Ragini Jain, Geetanjali Environmental Solutions Plenary discussion	Chair: Prof. K.J. Nath	Inaug-4 Inaug-5 Inaug-6 Inaug-7
20.25	Conclusion of inaugural event, vote of thanks		
20.30	Informal introductions for workshop participants, followed by dinner		

Day 1		Thursday 2 February	
Time	Topic (Paper titles are shortened)	Presenter	more ...
9.15	Presentation of workshop team, logistics information	Jonathan Hecke	
9.30	Introduction to the workshop programme	Adrian Coad	
9.45	Paper session I: Support for the informal sector I.1 Waste & Citizenship Forums – achievements & limitations I.2 Waste Pickers – Victims or Professionals? I.3 Embracing, not displacing the informal sector	chair: Martin Medina Sonia Dias Anne Scheinberg Jonathan Rouse	3.3.3 Paper 11 Paper 56 Paper 19
11.00	Break		
11.30	Paper session II: Private sector participation II.1 Alternative service delivery models – the case of Delhi II.2 A large contractor and traditional collectors II.3 SWM – a catalyst for reform in Nigeria II.4 Development of small enterprises in India	chair: David Kuria Shubhagato Dasgupta Nagwa el Karawy Andy Whiteman Sanjay Gupta	3.3.3 Paper 47 Paper 80 Paper 74 Paper 16
13.15	Lunch		
14.30	Brief introductions to poster presentations		3.3.7
14.45	The significance of this workshop in the development of the CWG	Jürg Christen	3.3.5
15.00	First debate. Motion: <i>We believe that it is not appropriate in many low-income countries to expect recipients of waste management services to pay the full costs of these services, and that charging directly for waste management services leads to negative consequences</i>	chair: Rueben Lifuka	3.3.6
15.45	Break		
16.15	First session of Thematic Working Groups		3.3.4
19.30	Dinner		

20.30	Informal evening session	3.3.7
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Day 2		Friday 3 February	
Time	Topic (Paper titles are shortened)	Presenter	more . . .
9.00	Paper session III: Community-based systems	chair: Lizette Cardenas	3.3.3
	III.1 Decentralised composting – potentials for meeting MDGs	Silke Drescher	Paper 72
	III.2 Sustainable composting in Bangladesh	Tariq bin Yousuf	Paper 27
	III.3 The role of women in sustainable SWM – Sri Lanka	S G J Rajkumar	Paper 49
	III.4 Community-based SWM in different communities - Dhaka	Md Maruful Hoque	Paper 58
	III.5 Multistakeholder dialogue in rural Bulgaria	Diana Iskrea	Paper 73
10.45	Break		
11.15	Paper session IV: Various themes	chair: Cecilia Kinuthia-Njenga	3.3.3
	IV.1 Capacity building and networking in Mexico	Günther Wehenpohl	Paper 64
	IV.2 Capacity building for achieving the MDGs	Ljiljana Rodić-Wiersma	Paper 67
	IV.3 Cost recovery as a key requirement - Maputo	Joachim Stretz	Paper 18
	IV.4 Private sector participation - Morocco	Patrick Dorvil	Paper 8
	IV.5 Private sector healthcare waste management - Bangladesh	Shafiul Ahmed	Paper 15
13.00	Lunch		
14.15	Enlargement of the CWG Core Group	Manfred Scheu	3.3.5
14.25	Interim feedback from the Thematic Working Groups		3.3.4
15.00	Second debate.	chair: Rueben Lifuka	3.3.6
	Motion: <i>We believe that current solid waste management upgrading initiatives are focusing too much on recycling and not enough on the improvement of public health.</i>		
15.45	Break		
16.15	Second session of Thematic Working Groups		3.3.4
19.00	Cultural programme – Music from West Bengal		
20.30	Informal evening session		3.3.7

Day 3		Saturday 4 February	
Time	Topic (Paper titles are shortened)	Presenter	more . . .
9.00	Paper session V: Supporting the informal sector	chair: Laila Iskandar	3.3.3
	V.1 Organising waste recyclers – towards selected MDGs	Bharati Chaturvedi	Paper 33
	V.2 The informal recycling sector – Northern Mexico	Martin Medina	Paper 10
	V.3 The informal sector – efficient or disturbing?	Günther Wehenpohl	Paper 35
	V.4 Eradicating child and migrant labour in waste - Argentina	Jessica Koehs	Paper 34
10.45	Group photo and break		
11.30	Introducing candidates for CWG Core Group	chair: Manfred Scheu	3.3.5
	Presentations of Thematic Working Groups	chair: Rueben Lifuka	3.3.4
13.00	Lunch		
14.15	Introduction to field visits	Prof Majumdar	3.3.9
14.40	Continuing the presentations of the Thematic Working Groups	chair: Rueben Lifuka	3.3.4
15.30	Lessons learned from the workshop		3.3.8
15.30	Linking SWM with Millennium Development Goals	Anne Scheinberg	2.2
15.45	Break.		

16.15	Third debate. Motion: <i>We believe that the lack of public awareness is the basic cause of all our problems in solid waste management.</i>	chair: Rueben Lifuka	3.3.6
19.30	Dinner		
20.30	Informal evening session		3.3.7

Day 4		Sunday 5 February	
Time	Topic	Presenter	more . . .
morning	Site visits		3.3.9
17.30	Feedback on site visits		3.3.8
18.00	Evaluation of workshop Final statements		3.3.9
20.00	Closing dinner and multistakeholder entertainment	Sonia Dias	

3.3.2 Inaugural session

Following a press conference, the inaugural session provided an opportunity for the participants to be welcomed formally by the local organisers, the CWG, the Water Supply and Sanitation Collaborative Council (WSSCC) and Sulabh International. A short presentation on the thematic focus, objectives and philosophy of the Workshop was given. A message of welcome from the Minister of Public Health and Housing, Government of West Bengal was read out in his regretted absence. Then Saul Arlosoroff, who in a long career did much to advance water supply and sanitation – notably as Program Manager at the World Bank for the Global Water and Sanitation Program, presented a keynote address on behalf of the WSSCC. Some of these presentations are in Part C of the CD, as indicated in the schedule above.

Participants at CWG workshops always like to learn about the situation of solid waste management in the host country. The inaugural session provided an opportunity to hear from some of the leading lights in solid waste management in India. An illustrious panel was assembled to give some telling views of the dynamic situation of solid waste management in India. The presentations used at this time are on the CD [Part C].

3.3.3 Presentation of papers and discussion

There were five sessions on Days 1, 2 and 3, each lasting up to 1 hour and 45 minutes. Two were devoted to papers on the informal sector, one to private sector participation, one to community-based systems, and one covered a range of themes. Questions and comments were invited at the end of each session. Because the time for discussion was limited and in order to provide an accurate record of the discussion, participants were asked to write their questions on a form which was later passed to the speakers for them to write their responses. The full texts recorded in this way can be found in Part A of the CD, together with the papers and presentations of each speaker. Selected quotations from the presentations and very brief summaries of the discussion sessions can be found in Section 4.2.

Abstracts of the papers are available in Section 4.1 of this report, together with a brief list of keywords and an author index.

3.3.4 Thematic Working Groups

The Thematic Working Groups were seen as the core of the Workshop. The presentations of papers were intended to provide inspiration and ideas for discussion in the groups, and the outputs of the groups were expected to enrich the planning of CWG activities in the planning workshop that followed this Workshop. It was hoped that the discussions started in these groups would continue by e-mail or other means of communication after the Workshop. The Groups were also encouraged to consider the need for, and possible content of, guidance information related to the topic.

Topics for the Thematic Working Groups were proposed according to the topics that were covered in the papers that were submitted. Before the Workshop, participants were invited to propose additional topics and to indicate their first and second choices. The Workshop venue facilities allowed a maximum of five groups. The following list shows the topics that were proposed; the first five are the topics that were chosen for the Thematic Working Groups.

Topic	Code letter
Informal waste workers	A
Community-based systems	B
Capacity building and education	C
Private sector participation	D
Cost recovery	F
.....	
Raising public awareness, motivating politicians and mobilising communities	
Data collection and performance monitoring	
The management of healthcare waste	
Resource mobilisation and raising the awareness regarding SWM among donor and lending agencies	
Networking and collaboration	
The Clean Development Mechanism, and its implications for SWM in DC	

The Groups met for two sessions of nominally two hours each. They provided a brief interim report after the first session and a more comprehensive report at the end of the Workshop. The PowerPoint presentations used for the final feedback sessions can be found in Section B of the CD. The outputs are summarised in Section 4.3 of this report.

3.3.5 CWG business

At the CWG planning meetings during the Dar es Salaam Workshop in 2003, an interim Core Group was established to oversee the organisational development of the CWG. (The Core Group is responsible for policy and direction, for planning CWG initiatives, and for co-ordinating and managing activities that are funded centrally.) At the 2003 workshop it was given the particular responsibilities of looking for core funding for the CWG, forming alliances with other organisations and planning the next workshop.) Three of the four members of the Core group had personally been involved in the development of the CWG from its initial stages, but all are European, and it was agreed that it was essential to widen the membership of this group.

Therefore, during this workshop the need to enlarge the Core Group was explained, together with the function of the Core Group and the duties of Core Group members. (More can be found in Part F of the accompanying CD under "CWG – Introduction & election".) As a result of the election and changes to the original membership, the members of the new Core Group (listed in alphabetical order) are:

- Juerg Christen, Switzerland,
- Sonia Dias, Brazil
- Sanjay Gupta, India,
- Laila Iskandar, Egypt
- Arnold van de Klundert, the Netherlands
- Rueben Lifuka, Zambia
- Günther Wehenpohl, Germany

Opportunities were taken during the workshop to present an outline of the history and nature of the CWG (see the presentation "Inaug-1" in Part C of the CD).

A two-day planning workshop followed this Workshop. The reports of the Thematic Working Groups were a major input into the discussions at this meeting.

3.3.6 Debates

As mentioned in Section 3.2, participants were asked before the Workshop to propose and select the motions that they would most like to debate.

The motion that attracted the most votes was:

We believe that the lack of co-ordination and responsibility for solid waste management at the national level in many countries is a major hindrance to the development of this sector.

This was clearly an issue that was important to many of the participants, and that should be considered in more detail. However it was not suitable as a motion to be debated because it had the worst balance between speakers for and against – nearly five speakers for the motion for every speaker against.

The motion that came next in the voting had a better balance between speakers on both sides.

We believe that it is not appropriate in many low-income countries to expect recipients of waste management services to pay the full costs of these services, and that charging directly for waste management services leads to negative consequences.

Its position as best debate topic was stronger when linked with another motion that also received many votes:

We believe that the discussion about "affordability" and "cost recovery" is not relevant. Solid waste management services are a public good, and consequently should be financed centrally by government.

According to the votes and the offers of speakers, this was the first choice.

The second choice, according to the same criteria, was the motion:

We believe that current solid waste management upgrading initiatives are focusing too much on recycling and not enough on the improvement of public health.

The motion with the best balance between speakers for and against was the motion:

We believe that most studies of waste composition are a waste of time.

This result was somewhat surprising, because most waste management studies seem to begin automatically with waste composition studies, without questioning whether they are necessary or not. However, the Workshop Steering Group decided that the third debate should take another of the topics that received a good number of votes, which was:

We believe that the lack of public awareness is the basic cause of all our problems in solid waste management.

Brief summaries of the points made during these debates can be found in Section 4.4, and a full list of debate topics can be found on the CD in Part G: "Debate and Discussion Topics".

3.3.7 Posters and informal evening sessions

Some papers that were offered for the Workshop were judged to be positive contributions to the Workshop, but could not be accommodated into the plenary presentation sessions, were presented as posters, and the papers that accompanied the posters were distributed. Presenters of poster papers were also given a minute each to introduce their papers to the participants during a plenary session. The papers and photographs of the posters can be found in Part D of the CD – “Poster Presentations”.

The informal evening sessions (renamed the “Open University”) attracted an enthusiastic audience. Participants were invited to sign up to present additional material and lead discussions. The presentations included the topics listed below. (If the presentations are also available on the accompanying CD, the indication “CD-D” or “CD-E” is added after the reference to the presentation, according to whether the material can be found in Part D or Part E of the CD.)

- Demonstration of a PowerPoint training presentation on home composting by Anne Scheinberg (CD-E)
- Presentations of informal sector waste collection and recycling in Cairo, by Laila Iskandar
- Presentation by Michael Kabungo on solid waste management in Lusaka, Zambia. (CD-E)
- Use of recycled plastic film in road construction by Almitra Patel. (CD-E)
- Management of E-waste (1) Shobbana Ramesh (CD-D)
- Management of E-waste (2) by Wilma Rodrigues who showed a film on e-waste called “Bangalore’s Challenge”. (Some copies of this film are available from Ms Rodrigues). (CD-E)
- Showing of new film called *60 kilos* about the legitimacy of recycling work. The film was made by Bharati Chaturvedi and Vishal Bhargava, and had been finished just a few days before the Workshop. The showing was followed by a discussion. A few copies are available from Ms Chaturvedi.

3.3.8 Feedback and Workshop evaluation

Each participant was asked to write on a card a phrase or short sentence to summarise what they had gained or learned from the Workshop, and to pin it to one of the pinboards. Each was then given one small sticker to put on the card that they felt best expressed the value of the workshop. The statements and the voting can be found in Section 5.2.1.

As one of the last activities of the Workshop, participants were asked to fill in an evaluation questionnaire. The results of this questionnaire and some comments on them can be found in Section 5.2.2.

3.3.9 Site visits

The site visits took place during the morning of Day 4. They were introduced in the afternoon of Day 3, and then participants were asked to sign up for the visit of their choice. Four programmes were proposed:

- a) the waste disposal site of Kolkata – Dhapa dumpsite – which had been in use for decades, and where a large number of waste pickers were working; there was also a composting plant which was being rehabilitated by a private company;
- b) a small town – Bhadreswar – where there was a house-to-house collection of waste, for which a fee was collected, and also a manual composting operation and a crematorium that used biogas as a fuel;
- c) healthcare waste treatment facilities;
- d) the well-known and unique wastewater treatment and pisciculture area – 6000 Ha of wetlands – where the wastewater of the city is treated in crude lagoons and 25 tons of fish are harvested each day for the local market, in addition to large quantities of vegetables.

Since there was insufficient demand for programme (c), this item was cancelled.

In the afternoon of Day 4, at the closing session, brief reports of the three visits were given. Photographs taken during these visits can be found in Part I of the CD

3.4 Maintaining momentum

There was the tendency during the workshop for some participants to refer to the CWG using the pronouns "you" and "they", and so participants needed to be reminded that the appropriate pronoun to use is "we", since there is no formal membership, and all participants have opportunities and responsibilities to advance the work of the CWG.

The Thematic Working Groups were encouraged to prepare proposals for CWG activities and initiatives, thinking along the lines of the four focal themes of the CWG: governance, capacity building, networking and knowledge sharing. They were also encouraged to continue to share and discuss by e-mail after the workshop. The suggestions of the Thematic Working Groups were discussed in some detail by the subsequent planning workshop, with the aim of developing the proposals that had been suggested.

Several participants mentioned the value of meeting others with similar interests, and it is hoped that networking between individuals will provide encouragement and ideas in the coming days.

The Secretariat at Skat and the website will provide opportunities for networking and sharing ideas; participants were encouraged to make use of it in new and creative ways.

Most publications associated with the CWG have been published only in English. There is scope for editing, summarising and regionalising at least some of these publications so that they can reach a wider range of practitioners. Together with the publishing of materials, we must also consider strategies for distributing them so that they get into the right hands. However, it remains true that the most effective communication is usually face-to-face dialogue, and so the CWG – all of us – must use every opportunity to inform and encourage others to work for higher standards of solid waste management and improved living and working conditions for all involved.



This too was an important part of the programme

[Photo by Jessica Koehs]

4 Summary of the thematic content of the Workshop

4.1 Overview of papers presented

4.1.1 Abstracts

The abstracts are listed according to a number that reflects only the sequence in which proposals were submitted. Abstracts can be located according to the list of keywords that follows [Section 4.1.2] or according to an author list [Section 4.1.3]. The papers are presented in full in Part A of the CD, together with PowerPoint presentations and records of discussions.

A more concise overview of the presentations, with some quotations from the actual presentations and brief notes of the discussions, is available in Section 4.2.

Title	Private Sector Participation in Solid Waste Management: Empirical Evidence from Morocco	
Number	8	Author Patrick L. Dorvil
Abstract	<p>This paper addresses the involvement of the private sector in financing and managing solid waste management (SWM) services in low- and middle- income countries (LMIC). In the first section of this paper, private sector participation (PSP) in Morocco is presented, including the reasons for involving private enterprise. The second section discusses the PSP experience in Tangier where PSP has been practised since the year 2000. Relevant issues of contract management and some principles of sustainability in SWM are discussed. One particular issue is the lack of accurate information on the quantities of waste to be collected, and the impact this has on the relationship between client and contractor. The paper concludes with some key lessons learnt from this evidence.</p>	
Keywords	PSP, information, North Africa	

Title	Achieving the MDGs through the informal recycling sector: A case study in Northern Mexico	
Number	10	Author Martin Medina
Abstract	<p>Over the past several decades a dynamic informal recycling sector has developed in Juarez, one of the largest Mexican cities that border the United States. The potential contribution of the informal sector for achieving the MDGs has generally been neglected. This paper examines the contribution that informal recycling activities in Juarez are already making in terms of achieving MDGs related to poverty reduction, employment creation, and environmental sustainability (Goals 1, 7, and 8). Field research was conducted in the area in 2004 using a joint qualitative / quantitative research methodology. The paper argues that public policy should harness the potential of the informal recycling sector for achieving MDGs by supporting it instead of suppressing it or ignoring it. Considering the millions of people worldwide that survive by salvaging materials from waste, recognition and support of their activities would translate into their empowerment, improved living and working conditions, and minimization of public investments in the handling, collection and final disposal of solid wastes.</p>	
Keywords	informal sector, recycling, North America	

Title	Waste & Citizenship Forums – Achievements and limitations	
Number	11	Author Sonia Maria Dias
Abstract	<p>The Waste & Citizenship Forums are new participatory channels for formulation of policies for urban solid waste management that join NGOs, waste pickers' associations and public governments in an effort to improve standards in this area, especially by tackling social issues faced by pickers. Implemented on the national level under the leadership of the UNICEF back in 1999, today there are more than 23 State Forums and also many implemented on the municipal level. This paper discusses their objectives, strategies and main impacts and, also, some of the challenges. Special attention is given to the experience of the Waste & Citizenship Forum of Minas Gerais State.</p>	
Keywords	informal sector, associations, South America	

Title	Public service through private business: the experience of healthcare waste management in Bangladesh	
Number	15	Authors Shafiul Azam Ahmed, Manzurul Hassan, Monir Alam Chowdhury
Abstract	<p>The prevalence of diseases that may be transmitted by hospital waste is alarming in Bangladesh. There is evidence of hepatitis B infection at some point in their lives among 10% of children (5-10 years old) and 30% of adults. About 5% of the total population is thought to suffer from chronic hepatitis B infection. Although cases of HIV/AIDS are few in Bangladesh (only about 13,000 cases estimated in 2001), nevertheless the numbers are rising. In the absence of healthcare waste management, infected syringes and needles are often improperly disposed of. These are collected and resold. Reuse of infected syringes is a potential risk in spreading many diseases including HIV/AIDS.</p> <p>Hospital waste in Bangladesh is generally disposed of in the same way as ordinary domestic waste. Khulna city, however, is an exception. It remains the only city in the country with a hospital waste management programme (HWMP) running for several years under a public-private partnership arrangement. The need for such services is acute in other cities, including Dhaka city. This paper discusses the potential of delivering healthcare waste management services through private enterprise in partnership with municipalities.</p>	
Keywords	healthcare waste, PSP, South Asia	

Title	Private Sector Participation in Urban Services: Development of Small and Medium Enterprises in India	
Number	16	Author Sanjay K. Gupta
Abstract	<p>This paper contrasts various mechanisms for involving the private sector that have been tried in two urban areas in India – Navi Mumbai near Mumbai in Maharashtra and Vishakhapattanam in Andhra Pradesh. The approaches vary in size from a waste collection contractor that employs nearly 400 staff to the 78 small enterprises that sweep the streets of one city. Conventional companies, NGOs, CBOs and municipalities are all involved in these arrangements. These experiences clearly show the huge potential for job creation and the quality of service that can be provided when all stakeholders play their part. Municipalities have key roles in providing equipment and land, and in introducing and monitoring the private sector service providers.</p>	
Keywords	PSP, MSE, South Asia	

Title	Cost recovery as a key requirement for the improvement of SWM services in Maputo	
Number	18	Authors Joachim Stretz and Gereon Hunger
Abstract	<p>Providing a regular solid waste collection service is one aspect of meeting the seventh Millennium Development Goal, which concerns environmental sustainability. In Maputo, Mozambique, waste collection services have been restricted by lack of municipal income. A first attempt at collecting a service fee for solid waste management in Maputo was unsuccessful. This paper describes the second attempt to generate revenue for solid waste management services from households, and the means used to recover the costs of waste management from commercial and industrial generators, which included a "Proof of Service" that is used to ensure that non-domestic generators are managing their solid wastes in an acceptable way and paying for the service. Another component of the new framework is a system for licensing private sector service providers. This paper discusses the challenges facing this new system and the significance of the steps that have been taken.</p>	
Keywords	cost recovery, licensing, Southern Africa	

Title	Embracing not displacing: Involving the informal sector in improved solid waste management.	
Number	19	Author: Jonathan Rouse
Abstract	<p>Many hundreds of thousands of poor people in South Asia make a significant, but often unacknowledged, contribution towards handling the subcontinent's solid waste. Changes in legislation and solid waste management systems have the potential to harm, or enhance, the livelihoods of this group. Often changes result in harm. This paper is based on case studies from research with informal-sector waste workers in Bangladesh, India and Pakistan. It considers the nature of their contribution, the problems they face from being excluded from waste work, and the potential for integration into formal solid waste management systems.</p>	
Keywords	informal sector, integration, South Asia	

Title	Sustainable composting: Some realities – Experiences from Bangladesh	
Number	27	Authors: Tariq bin Yousuf and Mansoor Ali
Abstract	<p>Slum-dwellers usually have no legal right to get municipal services. They are generally treated as polluters of the city environment. The composting approach in the slums and squatter settlements indicated that low income communities are not the cause of environmental degradation of cities but they can maintain a clean and liveable environment if they get external support. The composting projects in slums of Dhaka City are promoted by donor agencies and there is limited scope for the community to build capacity (both management and financial) to run them independently in future. This paper discusses 'how sustainable are the projects if the external support is withdrawn?' through some indicators such as community motivation and attitude, acceptability, ownership, and contribution.</p>	
Keywords	composting, sustainability, slum, South Asia	

Title	Social implications of solid waste management: The experience of organizing waste recyclers in achieving selected MDGs	
Number	33	Author Bharati Chaturvedi
Abstract	<p>This paper is divided into three sections, all based upon the interventions by an India-based environmental advocacy group, Chintan. The first section outlines Chintan's work with children wastepickers. The second describes the process of how Chintan has created partnerships with wastepickers to take up diverse waste handling contracts. In the third section the strands from both earlier sections are woven together to discuss how waste management, in this case, an imaginative approach to waste, has resulted in moving towards the Millennium Development Goal no 2, Access to Education (for children wastepickers). Finally, the conclusion suggests a shift in the way waste is perceived.</p>	
Keywords	education, recycling, South Asia	

Title	Forgotten amidst the waste? Health hazards linked to informal recycling in Argentina and efforts to eradicate child and migrant labor with waste	
Number	34	Author Jessica Koehs
Abstract	<p>As Argentina recovers from what has become known as its worst financial crisis, the crisis of 2002, the IOM office in Buenos Aires is paying particular attention to migrants living in situations of extreme vulnerability and poverty. In 2004, informal recyclers were identified as a target group within this "migration and poverty" framework because many of them, especially those residing in the shanty towns of Buenos Aires, have migrant backgrounds. Like other informal recyclers, migrants usually take up this dangerous activity due to their lack of access to better paying employment opportunities (which is often linked to their irregular migratory status and lack of national identity documents).</p> <p>The paper discusses the characteristics of informal recycling activities in Argentina, particularly in relation to child and migrant labor and the health hazards linked to this activity, and also describes and evaluates two initiatives that aim to stop children working as waste pickers and provide alternative jobs for migrant informal recyclers. The paper also discusses the links between these interventions and the Millennium Development Goals.</p>	
Keywords	child labour, informal sector, South America	

Title	The informal sector in solid waste management – efficient part of a system or marginal and disturbing way of survival for the poor?	
Number	35	Authors Sandra Spies and Günther Wehenpohl
Abstract	<p>When garbologists start to talk about the informal sector in solid waste management, opinions and solutions vary widely. Worldwide, there are several hundred thousands of waste pickers. Their activities are closely related to recycling, post-consumer waste reduction and, to a certain extent, to environmental protection. There are very few concepts related to how to integrate waste pickers into municipal solid waste reality. Experiences from Latin America, Africa and Thailand show both similarities and differences with respect to the problem, which is much more than a social one. The relation to markets, solutions close to and with the target group, tolerance in legislation and appropriate technologies are all key factors for successful approaches.</p>	
Keywords	recycling, integration, international	

Title	Alternative service delivery models to transform citywide municipal waste services: the case of the Municipal Corporation of Delhi	
Number	47	Authors: Rakesh Mehta and Shubhagato Dasgupta
Abstract	<p>This paper discusses the process of involving the private sector in the management of the solid waste for the Indian capital Delhi – an urban area with a population of over 14 million. The Municipal Corporation of Delhi (MCD) is among the largest municipal bodies in the world. The first section of the paper provides a detailed description and analysis of the municipal solid waste management [MSWM] service in Delhi, and its challenges. The next section describes the overall reform context in the MSWM sector in India. The paper then introduces the waste collection and transportation challenge and discusses the approach and process involved in detailed structuring of the preferred implementation option. The next section provides a brief overview of the process of bidding for private sector participation and an update on the present position of the awarded contracts. Finally the last chapter presents some of the learning on key success factors including openness and creativity on the part of the project developers, the need for detailed discussion with stakeholders and the importance of a transparent structuring and bidding process.</p>	
Keywords	PSP, source segregation, South Asia	

Title	The role of women in sustainable solid waste management and poverty alleviation in rural Sri Lanka		
Number	49	Author	S.G.J. Rajkumar
Abstract	<p>This paper is a case study from Vavunia, a rural town in Sri Lanka.</p> <p>Solid waste generated from human settlements causes problems in many part of the world due to lack of proper disposal facilities. The practice to disposing of solid waste in low-lying areas and adjacent to waterways is common in Sri Lanka, as in many other places. This leads to enormous problems and degradation of the environment and ecosystem. Remedial measures were undertaken in Vavunia (a rural town) with the active participation of the women living there. Rural society is closely knit and its members work together better than the residents of urban areas, who are often more cosmopolitan. An affordable, low-technology solid waste disposable system, which could be managed by the women in the community, was established with community participation. This led to income generation and employment opportunities.</p>		
Keywords	community-based, gender, rural, South Asia		

Title	Waste Pickers: Poor Victims or Waste Management Professionals?		
Number	56	Authors	Anne Scheinberg, Justine Anschutz and Arnold van de Klundert
Abstract	<p>Waste pickers have been scratching out a living on the margins of urban solid waste systems since these systems came into being, taking advantage of the status of waste materials as common property resources and earning, in general, much more than the minimum wage. While picking may provide a solution and a livelihood for pickers, it is often seen as a problem by formal authorities and development agents. With the intention of helping the waste pickers, development interventions focus on pickers' welfare needs or rights, and not on their professional activities, an approach which may disrupt livelihoods and fail to meet the needs of the pickers themselves.</p> <p>The modernisation of waste management systems opens new niches and puts governments and the formal private sector into new relationships to each other. In the process, it allocates both responsibilities and rights around waste in new ways. In this process, waste pickers can be losers, but they can also be winners, especially when waste picking is contextualised as providing new opportunities for waste picking, and as contributing to solving the waste management problem by keeping materials out of landfills. The best chance to support sustainable and positive change comes when there is a commitment to work with waste pickers embedded in their professional context, and to support them in finding and entering the better and more stable economic niches that can open during the process of modernising the waste management system.</p> <p>This is a sector-specific conclusion, but it has broad implications for other kinds of poverty reduction actions.</p>		
Keywords	recycling, new opportunities, international		

Title	Comparative study of community-based solid waste management in different communities of Dhaka city		
Number	58	Author	Md Maruful Hoque
Abstract	<p>Municipal solid waste is perhaps one of the most intractable of all the challenges associated with urban squalor and disease in Dhaka City. Community-based SWM systems were introduced in two different wards which have different situations such as density of population, living status, road network and land use. This paper aims to identify those factors which influence the success of this voluntary system and to analyse the roles of ward solid waste management committees, primary collection service providers, community leaders and Dhaka City Corporation, and their impact on the progress and sustainability of the system. The involvement of the community (particularly the women) in planning, implementation and monitoring of the community-based SWM system in the two wards was different. The reasons for the differences and the initiatives that are necessary to increase participation are also highlighted in the paper. The role of politics – possibly threatening the sustainability of the system and the scope of income generation – will also be discussed in the paper.</p>		
Keywords	community-based, comparison, South India		

Title	Capacity building and networking in municipal solid waste management – Experiences from Mexico, lessons for other countries?	
Number	64	Author Günther Wehenpohl
Abstract	<p>Capacity building in solid waste management (SWM) is a continuous need in Mexico. Even though the country has a lot of well qualified professionals, few of them are working in SWM and fewer still in the public sector. Urban SWM is, by law, the task of the municipalities, in which the local government and also most of the decision makers in the administrations are changing at least every three years. This affects strongly the sustainability in the sector. On the other side there is an increasing demand for adequate SWM services to achieve the standards of the new national legislation. In order to address the lack of appropriately qualified people in the different departments of the municipalities linked to the sector, the Mexican National Environmental Ministry SEMARNAT and GTZ on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) prepared and implemented a capacity building programme in SWM. Started in 2004, this programme has already shown direct impacts on the target group. Other Latin-American countries have shown interest in participating in the network that has developed around the programme. In some of them, training in SWM has already been provided.</p>	
Keywords	network, training, North America	

Title	Capacity building in solid waste management and engineering for achieving the Millennium Development Goals	
Number	67	Author Ljiljana Rodić – Wiersma
Abstract	<p>In addition to genuine political will and availability of financial resources, achievement of Millennium Development Goals (MDGs) depends on the capacity of the people and organisations involved. If we rely on formal education to build capacities and thus contribute to the achievement of MDGs, this education has to be different from what it has been until now. (Engineering) education cannot remain limited to imparting technological knowledge only, while people are seen as a hurdle to acceptance of grand engineering schemes. Equally, management skills taught cannot be just a 'box of tricks', stripped of profound interest in the people concerned. The author believes that education ought to impart genuine interest in and compassion for fellow human beings and the world as we know it. Only then a significant improvement can be achieved in the living conditions of urban slum dwellers and population at large, poverty eradicated and environment preserved.</p> <p>As a Senior Lecturer in the subject of Solid Waste Management and Engineering at an institution of tertiary education, the author of this paper presents some experiences in relation to achieving United Nations Millennium Development Goals. A bibliography of background reading is supplied.</p>	
Keywords	syllabus, training, international	

Title	Decentralised Composting: Lessons learned and future potentials for meeting the Millennium Development Goals	
Number	72	Authors Silke Drescher and Chris Zurbrügg
Abstract	<p>In order to allow decentralised composting to unfold its full benefits for developing countries, environmental, social and economic aspects need to be considered. Successful composting is only achievable if municipal administrations are open-minded enough to accept new working partnerships and appropriate technologies. The needs of citizens and the market have to be considered and potential sources of income must be developed.</p> <p>This paper summarises the research findings of Sandec's research programme on decentralised composting. It presents the strengths and weaknesses and provides indicators for sustainable decentralised composting schemes. Furthermore, it introduces the latest outputs of Sandec's work including the decomp database and a users' manual on decentralised composting.</p>	
Keywords	community-based, composting, international	

Title	Multistakeholder dialogue for improvement of household waste management in rural Bulgaria		
Number	73	Author	Diana Iskрева-Idigo
Abstract	<p>The paper describes the tools used to introduce a multistakeholder dialogue for implementing efficient solutions for waste management in rural communities of Bulgaria. This is an innovative practice for Bulgaria – to involve people of all age groups and any level of education and position in a joint dialogue – aiming to implement several pilot projects in rural communities to serve as good practical examples of management of solid waste, human and animal waste and wastewater.</p> <p>The analysis of the local measures is done in the framework of the national context.</p>		
Keywords	participation, rural, Eastern Europe		

Title	Solid waste management as a catalyst for governance reform: Micro-licensing for private sector participation in Nigeria		
Number	74	Authors	Andy Whiteman, Dr Lynne Barratt, and Dr Ken Westlake
Abstract	<p>The quality of solid waste management (SWM) services is heavily dictated by a range of factors inherent in good Governance. The visible cleanliness of a city is just one parameter that we use when deciding on a place to live, stay, set up business and invest. It is a sign of a healthy functioning city, a place where corruption does not stifle opportunity, an indicator of a degree of care being taken by Government to promote a healthy living environment for citizens.</p> <p>This paper summarises key experiences from the on-going reform process of the SWM service sector in Nigeria's Enugu and Benue States. Drawn from work sponsored by the UK DFID State and Local Government Programme, the paper highlights some experiences which may be useful for those similarly interested in improving the quality of SWM services in sub-Saharan African cities and towns. The paper discusses a potentially new 'micro-licensing' model for SWM service provision, offers insight on critical institutional and legal reform issues, and emphasizes the importance of community participation and public awareness.</p>		
Keywords	PSP, governance, West Africa		

Title	The relationship between a large waste management contractor and the traditional informal waste collectors of Cairo		
Number	80	Author	Nagwa el Karawy
Abstract	<p>In response to several environmental problems, chiefly air pollution, the Government of Egypt invited tenders for solid waste management in the major cities and tourist centres of Egypt. The situations in the various cities differed considerably. In Cairo the domestic waste from middle- and upper-income areas was being collected and recycled informally by a community recently arrived from a rural area, known as the Zabbaleen. This paper recounts some of the experiences of a large waste management contractor (formal sector) as it explored ways of working together with the Zabbaleen community.</p>		
Keywords	informal sector, integration, North Africa		

4.1.2 Key words

Following each key word, in brackets, are the identification numbers of the papers that have been assigned these keywords.

topics			location
associations (11)	healthcare waste (15)	participation (73)	Eastern Europe (73)
child labour (34)	informal sector (10, 11, 19, 34, 80)	PSP [private sector participation] (8, 15, 16, 47, 74)	international (35, 56, 67, 72)
community-based (49, 58, 72)	information (8)	recycling (10, 33, 35, 56,)	North Africa (8, 80)
comparison (58)	integration (19, 35, 80)	rural (49, 73)	North America (10, 64)
composting (27, 72)	licensing (18)	sustainability (27)	Southern Africa (18)
cost recovery (18)	MSE (16)	syllabus (67)	South America (11, 34)
gender (49)	network (64)	training (64, 67)	South Asia (15, 16, 19, 27, 33, 47, 49, 58)
governance (74)	new opportunities (56)		West Africa (74)

4.1.3 List of principal authors (alphabetical order)

Principal author's name	Paper number	Title of paper
Ahmed, Shafiu	15	Public service through private business: the experience of healthcare waste management in Bangladesh
Chaturvedi, Bharati	33	Social implications of solid waste management: The experience of organizing waste recyclers in achieving selected MDGs
Dasgupta, Shubhagato	47	Alternative service delivery models to transform citywide municipal waste services: the case of the Municipal Corporation of Delhi
Dias, Sonia Maria	11	Waste & Citizenship Forums – Achievements and limitations
Dorvil, Patrick L.	8	Private Sector Participation in Solid Waste Management: Empirical Evidence from Morocco
Drescher, Silke	72	Decentralised Composting: Lessons learned and future potentials for meeting the Millennium Development Goals
Gupta, Sanjay	16	Private Sector Participation in Urban Services: Development of Small and Medium Enterprises in India
Hoque, Md Maruful	58	Comparative study of community-based solid waste management in different communities of Dhaka city
Iskreva-Idigo, Diana	73	Multistakeholder dialogue for improvement of household waste management in rural Bulgaria
Medina, Martin	10	Achieving the MDGs through the informal recycling sector: A case study in Northern Mexico
Rajkumar, S G J	49	The role of women in sustainable solid waste management and poverty alleviation in rural Sri Lanka
Rodić-Wiersma, Ljiljana	67	Capacity building in solid waste management & engineering for achieving the Millennium Development Goals
Rouse, Jonathan	19	Embracing not displacing: Involving the informal sector in improved SWM.
Scheinberg, Anne	56	Waste Pickers: Poor Victims or Waste Management Professionals?
Spies, Sandra	35	The informal sector in solid waste management – efficient part of a system or marginal and disturbing way of survival for the poor?
Stretz, Joachim	18	Cost recovery as a key requirement for the improvement of SWM in Maputo
Wehenpohl, Günther	64	Capacity building and networking in municipal solid waste management – Experiences from Mexico, lessons for other countries?
Whiteman, Andy	74	Solid waste management as a catalyst for governance reform: Micro-licensing for private sector participation in Nigeria
Yousuf, Tariq	27	Sustainable composting: Some realities – Experiences from Bangladesh

4.2 Overview of the presentations and discussion of papers

The papers that were presented, the visual presentations and the records of the discussion can all be found, listed according to the numbers of the papers, on the CD in Part A. This section includes some memorable quotations from the presentations [as opposed to the written papers] and some notes from the discussion session that followed each group of presentations. The papers, presentations and records of discussion can be found in Part A of the accompanying CD.

Session I Support for the informal sector

Papers			
11	Sonia Dias	The growth of a waste pickers' movement in Brazil	
56	Anne Scheinberg	New approaches to – and new opportunities for – waste pickers	
19	Jonathan Rouse	The extent and vulnerability of the informal sector in South Asia	

Quotations from presentations

- *No more children in open dumps* – Brazil campaign slogan
- For waste pickers to learn *how to work in a cooperative way is not easy. The process of organization is slow.* [Dias]
- *Privatization of municipal recycling programmes is driving pickers away from business.* [Dias]
- *New niches and functions for waste pickers will open; others will close* [Scheinberg].
- *"Western eyes" may neglect or misinterpret the position and condition of pickers* [Scheinberg]
- *Solid waste management interventions which ignore the informal sector are risky* [Rouse].
- *Understanding and integrating the informal sector won't necessarily make your life easier* [Rouse].

Discussion

The change of status of waste pickers in Brazil was assisted by the national and local institutional environment – laws, municipal constitutions, public concern [Dias]

There is a complex web of payments often associated with informal sector work. The informal sector may be very well organised.

We often think of bypassing the middlemen, but the relationship between pickers and middlemen is not always exploitative, and the middlemen could organise powerful opposition.

Session II Private sector participation

47	S. Dasgupta	Describing World Bank assistance to Delhi to bring in the private sector
80	Nagwa El Kar'y	Efforts to integrate informal sector workers into the operations of a contractor.
74	A. Whiteman	Solid waste management as a vehicle for improving governance
16	Sanjay Gupta	Private service providers of various sizes in two communities in India

Quotations from presentations

- *The solid waste sector is fertile ground for alternative service delivery models* [Dasgupta].
- *Private sector participation needs to be part of wider sector reform exercise and at no point a goal in itself* [Dasgupta]
- *Address legal and institutional issues as early as possible in the process* [of engaging enterprises]. *Nothing truly works without legislation and enforcement* [Whiteman].
- *If taken up at the top political level, solid waste management can be a catalyst of progress on meeting MDG targets* [Whiteman].
- *Lowest bid/cost may not be the best option* [Gupta]
- *If contract documents are short they are vague; if they are long they are overwhelming* [Gupta]

Discussion

The issue of payment of contractors brought up some interesting points. In one situation, if a company won a government contract, it would expect to get the payments without doing the work. If paid directly by the service beneficiaries the private service provider must work or he will not get paid.

In the cases reported by Gupta the initial fee collection rate was 30%, but after 6 months it had increased to 70%.

Revenue collection is "the backbone", "the crux".

If residents get a service they will pay.

Session III Community-based systems

Papers	72	Silke Drescher	Options and opportunities for small-scale local composting
	27	Tariq bin Yousuf	The sustainability of barrel composting in two slum areas in Dhaka
	49	S G J Rajkumar	Linkages to poverty, gender, wastewater and water supply in Sri Lanka
	58	Maruful Hoque	Comparisons of attempts to start community-based collection services in two wards in Dhaka – one traditional and one more cosmopolitan
	73	Diana Iskрева	Getting a rural community in Bulgaria motivated for sanitation

Quotations from presentations

- *Individual decentralised composting plants are too small to benefit from the CDM payment system* [Drescher]
- *The "decomp" database for decentralised composting plants in developing countries is accessible worldwide via internet.* [Drescher]
- *Economic incentives could influence household behaviour for source segregation* [Yousuf].
- *In slums, fear of eviction made people unwilling to pay for the composting system* [Yousuf]
- *One aim of the pilot projects was to provide feedback to the process of master plan formulation.* [Hoque]
- *Time and motivation are the main factors for the success of community-based systems.* [Hoque]
- *Special attention was given to youth and elder women.* [Iskрева]

Discussion

Many community-based systems are set up by older residents but they later get tired and pull out, leaving very little institutional memory.

A key factor in sustainability is participation by the community, but community members should be involved in the planning, not just the implementation.

Water supply and sanitation projects may be able to cross socio-economic and religious barriers because of the clear objectives, but some community-based systems are set up by groups of friends that tend to exclude others from sharing in the responsibility and therefore in the ownership.

Session IV Various themes

Papers	64	G Wehenpohl	A systematic training programme and network that has strong local roots
	67	Ljiljana Rodic	A fresh look at what we do for our students
	18	Joachim Stretz	A failure and a success in cost recovery. Getting businesses to take action
	8	Patrick Dorvil	Private sector participation in Morocco – problems with information
	15	Shafiul Ahmed	Looking after healthcare waste in a big city – almost financially sustainable

Quotations from presentations

- One of the impacts was that *several estates and municipalities started with the construction of landfills based on the knowledge they obtained from the programme* [Wehenpohl].
- *Current education in many countries is focused on information. This is very inadequate. Educating intellect ought to entail development of full capacity for critical and analytical thinking.* [Rodic]
- *Focus on intellect alone is insufficient to address current issues of the world. Only if our intellectual endeavours are inspired by qualities of heart, by genuine interest in and compassion for human condition and that of the world, will our solutions bring lasting improvement for people around the globe.* [Rodic]
- *The "Proof of Service" for the collection of industrial and commercial wastes completes cost recovery mechanisms and allows cross-subsidizing of services for the urban poor.* [Stretz]
- *The fear of losing the waste fee (again) gives a high motivation on municipal level to improve service provision* [Stretz].
- *It is possible to provide reasonable service despite weak capacity, policy and regulation through a participatory and consensus building process.* [Ahmed]

Discussion

There is a tendency for donors and funding agencies to select the technology options to be used in their projects without taking enough consideration of local opportunities for recycling. Local administrations tend to prefer sophisticated technologies.

A key factor leading to the success in Maputo is that the City asked the project for help. GTZ provides information on options and likely consequences, but the City Council makes the decisions.

If the waste management authority has good data on the quantities of waste generated by industries and businesses, it is possible to monitor that all their waste is brought to official disposal sites, rather than disposed illegally.

Most education systems train people to think logically but not laterally. Young children think more creatively than senior students; education tends to stifle our creativity.

We often face the problem of professional arrogance. Professionals are often too proud to accept advice from professionals in other fields. Also, many professionals do not like to share information freely with ordinary citizens, but use complex language. If we really understand something well, we can explain it in simple language.

Session V Support for the informal sector

Papers	33	Bharati Chaturvedi	Promoting co-operation, education and profit in Delhi.
	10	Martin Medina	Interesting recycling opportunities where there is a rich neighbour
	35	G. Wehenpohl	Three very different case studies – How to integrate the informal sector?
	34	Jessica Koehs	The problem of child pickers, and a childcare centre for pickers' children

Quotations from presentations

- *Private sector participation offers an opportunity to move towards the twin goals of education and health / sanitation. However, this requires a shift in trajectory, from its current application as a means of cleaning cities to a system that contains potential for the MDGs.* [Chaturvedi].
- *We need to see waste with new eyes. Waste must be re-examined, and seen not as a noxious entity but as a tool for education, poverty reduction and health.* [Chaturvedi].
- *When waste pickers have access to source-segregated materials, their working and living conditions can improve dramatically* [Medina].
- *Social, environmental and economic aspects must all be considered, but it has to be decided what is the main point of view, the aspect to be considered as priority* [Wehenpohl]

- *Ways of cooperation carry a very symbolic meaning: if informal sector workers are incorporated, their status is no longer semi-illegal* [Wehenpohl].
- *There is still time to save these children and meet the MDGs... but not much.* [Koehs]

Discussion

One way of integrating the informal sector into policies without absorbing them into formal operations is to rewrite the contracts so that the informal sector has first rights to dry waste. Another is to give them access to land for their work.

Since the informal recycling centre is such a large operation, there must be interest in taxing it, particularly in cases like the one we heard of in Mexico, where earnings can be ten times the minimum wage.

The role of the municipalities was crucial in Mexico. When conditions for the informal sector got unfavourable, the mayor and academics intervened and awarded a concession to a co-operative.

Recognition of informal sector recycling can help to end repression or harassment by the police.

There is mobility within the recycling sector – moving to other jobs as opportunities arise and moving to more profitable materials or sources.

4.3 Reports of Thematic Working Groups

It was suggested to the groups that they structure their discussions around the four core activities of the current CWG programme:

capacity building, advocacy, networking and knowledge sharing,

and consider the questions:

- What are the needs? and
- What can the CWG do to help meet those needs?

Additional material is available on the CD, in Part B.

4.3.1 Group A Informal Waste Workers

a) Some basic questions.

- Is poverty a key characteristic of the informal sector in solid waste management, thus linking it closely to the Millennium Development Goals and Poverty Reduction Strategy Papers?
- Is the informal sector an environmental or social issue - or both? Are there urgent needs to address in both fields?
- Should source segregation be a common starting point? Source segregation and separate collection lend some dignity to recycling, improve the output of waste pickers and reduce health risks. But is it realistic in a wide variety of contexts?
- Is formalization of the informal sector an appropriate and helpful goal? To what degree? How? What institutional forms are most promising: cooperatives, CBO's, small private sector companies. . . ?

b) Some suggestions for moving forwards

- provision of childcare, incentives for attending school, skills training for children of waste pickers;
- improve links: with generators, with other waste picker groups, with municipality to get land or facilities for recycling, with formal waste management contractors, by forming co-operatives;
- improve legal status – by issuing identity cards or regularizing the status of immigrants;

c) Ideas for CWG initiatives

- Advocacy – persuading and informing governments and donors regarding the needs and contribution of the informal sector; integrate issues related to the informal sector into international debates;

- Knowledge sharing – disseminate checklist on policy and practice regarding informal sector; document good practice on CWG website;
- Networking – set up a global network for informal sector support.

4.3.2 Group B Community-based systems

a) General statement of the group:

Community-based systems are a response of citizens to insufficient municipal services.

There are many obstacles to the setting up of a sustainable community-based system, most of which can be linked to a lack of trust. Each party thinks that the other is not reliable and capable of doing what is necessary. This leads to situations in which either many of the initiatives (voluntary activities) of small communities are not acknowledged by the respective municipalities or the leaders of the initiatives never seek contact with the local municipality.

b) Community-based systems are relevant in all areas:

- Urban areas: Here the SWM crisis is evident; therefore many initiatives of NGOs, donors and individuals are focusing on cities.
- Peri-urban areas: Not very much is known about them, but municipal services mainly concentrate on the established city centres, thereby neglecting the newer and peri-urban areas. Peri-urban areas are most affected by waste disposal [dumpsites].
- Rural areas: It is commonly believed that solid waste causes no problems in rural areas because it is not hazardous and the quantities are small. Any solid waste management systems that do exist are likely to be community-based.

c) Links

Community-based systems are usually concerned with the promotion of at-source segregation, primary collection, recycling and decentralised composting. However, they cannot fulfil all the tasks of a municipal SWM service, especially transport and final disposal. Because it is common that waste that is collected and brought to a transfer point by community-based service is not reliably removed by municipal vehicles, there is considerable interest in avoiding the dependence on the municipality by recycling and composting the waste locally. However, such community-based treatment schemes often depend on the local municipality for land on which to process the waste.

Large waste management contractors can be a threat to existing community-based systems. Municipalities and private operators often ignore or disregard the efforts and achievements of community-based systems and set up new schemes that destroy old structures without really improving the situation.

Municipal government plays an important role in solid waste management and has a direct influence on community-based systems. It is a bureaucratic system and officers generally do not receive any capacity building or training for their assignment; or if they do it is likely to be concerned with technology with no input on social issues so that they have little understanding of the benefits of participation. Additionally, they may have little feeling for the concerns and attitudes of the people they serve. Political leaders and bureaucratic staff often have different goals, or at least different strategies to meet goals. Furthermore, the political framework makes it difficult for even enthusiastic officers to put plans into action. In some cases it is a lack of political will and in other cases it is a lack of guidance. These difficulties encourage community leaders to isolate themselves from local government.

Some community-based systems are greatly influenced by political parties. The moment a supportive local political leader (such as a commissioner in India) is replaced, any community-based system that the former leader was associated with might collapse.

A large network of community-based systems might help to stabilise a member that is facing such a challenge. A network of community-based systems in one city would have a stronger voice in negotiations with the particular municipality.

Unstructured communities are difficult to mobilise to establish community-based systems.

d) Suggestions for CWG initiatives

- Advocacy: There is a great need to promote the idea of community-based schemes and to emphasise the need for linkages, particularly with municipalities. The production and dissemination of a small leaflet on the subject is a concrete step that could be taken.
- Networking: The CWG could act as a resources centre.
- Capacity building: Training may be needed by municipal officials and community leaders. The needs may include issues of technology, management and organisation, or financial management. The options for using local trainers and resources should be investigated. The availability of training materials should also be considered.

e) Discussion of presentation

- The CWG should take care to monitor the contributions that it uses, both advisers and information, and exercise judgement in selecting inputs and advice. Some mayors would not consider community-based options as good practice, because of a prejudice in favour of conventional solutions.

4.3.3 Group C Capacity building and education

a) The scope of discussions

Capacity building was considered to encompass:

- Creating an enabling environment (including advocacy with governments about the importance of solid waste management)
- Institutional development, and
- Development of human resources.

The group decided not to include conventional formal education in its deliberations.

Though there are many groups of stakeholders who are involved in solid waste management, the group decided to focus its attention largely on two groups:

- staff of municipal administrations who are in charge of solid waste management services, as they are those who either do the work or organise and monitor it, and
- central governments, as they can do much to create an enabling environment.

Some consideration was also given to building the capacity of generators of industrial wastes and of the staff of training centres and universities.

b) Networking

Networks were seen as important vehicles for improving capacity in solid waste management. These national and regional networks should build on existing connections, associations and donor project staff, and look for capable and enthusiastic partners. Unfortunately there are many cases where a need for capacity building is clear, but there is very little demand from individuals or organisations. The value of sharing discouraging experiences as well as successes was stressed.

c) Tools

Tools of two kinds were discussed:

- Sources of information and guidance – in many cases existing publications are not suitable because they are too long [and therefore intimidating, and expensive to produce and distribute], not in the local language or not appropriate to local needs. All of these problems can be rectified.
- Survey instruments [questionnaires, checklists etc.] for assessing needs – or demands – and opportunities.

d) Advocacy

Advocacy at national government level could have two objectives:

- to encourage the authorities to give a higher priority to solid waste management, and
- to promote alternative approaches, such as a more positive view of labour-intensive technologies.

e) Discussion of presentation

- A first step in advocacy might be possible in conjunction with existing networks, such as the meetings for mayors organised by ICLEI [the International Council for Local Environmental Initiatives; www.iclei.org], the IULA [International Union of Local Authorities; www.iula.org] or national associations of mayors.
- UN-Habitat provides opportunities for learning from good experiences through the International Dubai Awards. In addition, UN Habitat is co-organising a regional workshop on "Best practice in Solid Waste Management in Asia" to be held later in 2006 in the Philippines.
- Practitioners are usually associated with preparing and providing training, but they themselves need support and "recharging". WASTE has been interested in practitioner networks to support local experts and link them with each other. This could be taken up by the CWG.
- The publications associated with the CWG may need to be amended rather than simplified.
- Private sector service providers are another target group for capacity building that should be considered.

4.3.4 Group D Private Sector Participation

a) Goals

The most important goals for support of private sector participation were expressed as:

- to improve understanding of private sector participation and to raise awareness of the wide range of options available;
- to help avoid repeating mistakes by communicating pitfalls, and
- to gather new experiences, and then document and share them.

Municipal administrations often turn to private sector participation when they are in a crisis, with the result that arrangements are made in a hurry, and are therefore often inadequate. The CWG should find ways to improve the quality of partnerships.

b) The role of the CWG

The CWG has the potential to raise the profile of SWM globally, emphasizing the benefits for public health of solid waste management and the costs of environmental degradation. By promoting assessment of service standards, perhaps by means of an appropriate assessment tool, it may be possible to put pressure on municipal administrations that are performing below the average.

- The CWG might compile a database of people with experience in the field.
- The CWG could facilitate temporary alliances and link networks.
- The CWG should gather information and make it available on the CWG website and in other ways.
- The CWG might also act as a technical backstopper, answering enquiries.

c) Knowledge sharing and advocacy

There is a large amount of literature on the subject of private sector participation. The key challenge is to get it into the right hands. The main stakeholders are legislators, politicians, implementers and change agents.

We need to use contacts with the media, to contribute to editorials, and to involve the media in our workshops.

A short leaflet on private sector participation might be useful in some circumstances.

d) The human element

The output of this group touches on several aspects of human nature and how these impact on the quality of solid waste management services provided by the private sector:

- The nature of the partnership between a contractor and the client often depends on the nature of the personal relationships between the leaders on both sides.
- The egos of the leading figures must be considered, including the prestige that comes from providing a good service, and the reluctance of public sector administrators to lose some of their responsibilities and influence to the private sector.
- Expectation of personal benefit may lead some to involve the private sector.
- There is a need for enthusiastic champions who can promote a sustainable approach to solid waste management.

e) Discussion

- Means of convincing leaders to give more attention to solid waste management were discussed. Suggestions including quantifying health impacts, presenting before-and-after case studies and videos. Scientific evidence is necessary, but not sufficient. The power of symbolism is enormous – we need to touch peoples' hearts.
- The challenge is to put solid waste management on the political agenda. All levels of government should be involved. The Water Decade shows the need to act politically.
- In many cities solid waste management is in a crisis, and needs the urgent attention of the private sector which can provide capital and increased efficiency. It is better to allocate a part of a city or some of the functions to the private sector rather than to depend on the private sector for everything.
- An alternative to private sector participation is to establish joint service councils which have financial and operational autonomy, but are still within the public sector. There can be helpful rivalry between such a council and surrounding municipalities. Many resist involving the private sector because they feel they will lose power. On the other hand, a good private sector service can enhance the status of the mayor, who retains control of the service if the monitoring arrangements are well defined.
- It is important to consider the distribution of power and responsibility between central government, local government and the private sector.
- There are risks involved in promoting a database of experts or providing an answering service for enquiries. The CWG might be lending its weight and authority to ideas that the majority of members might not agree with, or to experts who give advice beyond the level of their technical competence.

4.3.4 Group F Cost recovery

[The identification letters for the Groups are according to the initial proposals; topic F attracted more interest than topic E. The PowerPoint presentation on the CD is particularly recommended.]

a) The context

Inadequate financing of solid waste management systems is a common problem, leading to only partial coverage of services, budget deficits and the inability to plan capital expenditure.

The presentation begins by reviewing various options for funding solid waste management systems.

b) Knowledge sharing

The question was raised: "With so many studies and guidance documents on cost recovery – why does it continue to attract so much discussion? The need for dissemination and application of the available information was stressed.

c) Ongoing work

The group proposed the following steps for continuing work in this field:

- Documentation of the discussions at the Workshop;
- Defining a structure and work plan for continuing work;
- Collecting case studies from participants.

d) Discussion

- There was some discussion about the value of transferring development finance directly to the municipality concerned, rather than channelling it through central government.
- One should look carefully at the legal and institutional framework when deciding on options for cost recovery. It is often necessary to convince political leaders of the necessity of having sufficient and reliable funding.
- The importance of budgetary decentralisation (i.e. the legal right of municipalities to retain and allocate the revenue they raise) was discussed. Does the lack of this decentralisation constrain the effectiveness of cost recovery systems?

4.4 Some of the points raised during the debates

The conduct of the debates is explained in the guidelines in Part H of the CD. Points for and against the motions were made both by the teams and by the audience. In this section some of the key points on both sides will be summarised.

4.4.1 First debate

We believe that it is not appropriate in many low-income countries to expect recipients of waste management services to pay the full costs of these services, and that charging directly for waste management services leads to negative consequences.

a) Arguments that support the motion

There are two kinds of service: private services like the cinema and public services like the police. Unlike water and electricity supply, solid waste management is a public good, because if my neighbour's waste is not collected, I suffer, whereas I do not suffer if he does not go to the cinema.

Collection rates for solid waste management fees are often very low, and the actual charges for low-income households are so low that it is not cost-effective to take procedures against individual households. So it is better to pay for the service in some other way.

Residents can pay something for the service, but they should not be required to pay the full costs. It is reasonable to ask for additional payment for a higher standard of service, if a household elects to have the superior service.

Rural towns also need a service, but most of the residents cannot afford to pay.

Since the low-income groups cannot afford to pay the whole costs, they should be cross-subsidised. Part of this subsidy could come from a tax on goods.

b) Arguments against the motion

Solid waste management services are important for protecting public health, and therefore must be sustainable. The only way to ensure sustainability is to recover the cost from the beneficiaries.

Even low-income countries have middle- and high-income residential areas where the households can afford to pay a fee that will cover the costs of collecting from low-income areas.

The 'polluter pays' principle can be extended to households – it is not just for industries. The payment of a fee makes the service provider accountable to the recipient of the service. When people are paying for the service they use the complaints line and demand a reliable service.

The other service that comes to our door is the post, and we expect to pay for that.

People can pay for the service. Compared to the monthly charge for cable TV, or monthly expenditures on cigarettes, the costs of a waste collection service are small.

We should not condemn the poor to inadequate services – they also should pay the full costs.

c) Results of the vote: For the motion:23. Against: 30 Abstentions: 7. Motion defeated.

4.4.2 Second debate

We believe that current solid waste management upgrading initiatives are focusing too much on recycling and not enough on the improvement of public health.

a) Arguments that support the motion

The protection of health is the fundamental reason for the existence of solid waste management services. Recycling is one of many options for dealing with the waste.

Recycling has many bad effects on the health of those involved and also on the health of the general public. Children on dumps are particularly at risk.

There is too little emphasis on health these days.

There are some very serious health risks associated with the recycling of certain types of waste.

The priority in high-density, low-income areas is to get the waste out in order to protect health. We should first concentrate on collecting 100% of the waste – then we can think about recycling.

b) Arguments against the motion

Composting allows many people to grow more and better crops.

It is not a question of recycling or health protection. We need both. The money saved or earned by recycling can be used for healthcare. Recycling improves environmental health.

Recycling workers need the income they get from this work. Their working conditions should be upgraded.

Recycling should be done by means of machines, so that the workers do not need to touch the waste.

There are risks in many professions. There is no contradiction between public health and recycling.

c) Results of the vote: For the motion: 23. Against: 20. Abstentions: 5. Motion carried.

4.4.3 Third debate

We believe that the lack of public awareness is the basic cause of all our problems in solid waste management.

a) Arguments that support the motion

Connectedness is the key. We need to be connected with each other and the environment and then we will all play our part. Connectedness comes from awareness.

We all see waste, we know it is a problem, but don't know what to do with it. People need to be told what to do with it, how to deal with it, and to be empowered so that they know what to do.

Public awareness is a communication tool. Even software engineers don't know about e-waste. Systems collapse as people don't feel that they should pay for the services. They need information, awareness.

Waste avoidance is the first step, before any other measure or technological option. This is achieved by raising awareness.

Public awareness includes all stakeholders, including decision-makers. If the public are aware of the issues they will also push political leaders to take the necessary action.

Public awareness is concerned with creating public demand or social pressure. The fact that some public awareness campaigns have been based on bad strategies does not prove that a high level of awareness is not essential.

To be practical rather than philosophical . . . Our perception of solid waste management is the cause of our problems. If we call it resource management, we would not have any problems. It is a question of perception and awareness.

b) Arguments against the motion

We need action, not talk.

It is not awareness that will change people's behaviour; it is effective enforcement and high fines for misbehaviour. So much money has been poured into awareness raising, but with little result.

Public awareness alone is not enough. People segregate waste as a result of awareness campaigns, but when they see that the segregated waste is mixed up again in the same truck, they lose trust and will not be motivated to segregate again by any amount of awareness.

An awareness campaign may tell me to put my waste into a container. But if there is no container or if it is full, what use is the awareness?

Often people are aware of what they should do, but they are not motivated to do it. The health warning on each packet of cigarettes does not stop people smoking. Awareness is not enough.

It is not just awareness, it is also the quality of the service that make a difference. This requires good supervision of the workers.

Many problems stem from the shortage of cash to do the job.

If there are no markets for recyclables, there is no point in having a big awareness campaign to promote recycling.

c) Results of the vote: The counts were not recorded, but the motion was defeated.

4.5 Other discussion

According to the decision of the Steering Group, the plenary discussion session that had been planned for Day 3 was replaced by another debate. One of the reasons for this choice was that the response to the questions on the pinboards had been less than enthusiastic.

The e-mail survey before the Workshop has selected the following two issues as the questions that most people wanted to discuss.

What are the most effective forces for change in the realm of solid waste management? [Consider situations where positive and sustainable improvements have been achieved and ask what factors were most influential in achieving these improvements. Was it the declaration of an international convention, policy, legislation, a court decision, a new political or community leader, public pressure, the involvement of an external agency, investment funding, training, a conference or forum? How can this experience be duplicated elsewhere?]

and

What is the best example of a significant and sustainable improvement in solid waste management that you have seen recently? What factors made it successful? What are the chances of it being replicated?

However, when these questions were fixed on pinboards with the request that written comments be added as a means of discussing them, there were no responses to either question. Some responses were written for other questions. The full list of discussion questions and the responses that were written can be found on the accompanying CD, in Part G, which is called "Debate and Discussion topics". Perhaps some of these topics could be raised at a later meeting or discussed on the Internet.



Public awareness in a Colombo Park

5. Annexes

5.1 Workshop participants

5.1.1 Names and contact details

Name	Current post and location	Nationality	e-mail
Olugbenga O. Adebola	Managing Director / CEO, Richbol Environmental Services Ltd, Lagos	Nigeria	adebolagb@richbol.com
Felix Adegnika	Programme Officer, Municipal Development Partnership, Cotonou	Benin	Fadegnika@pdm-net.org
Iftekhar Ahmad	Consultant, National Env. Consulting (Pvt) Ltd, Lahore	Pakistan	enviroplnr@hotmail.com
Shafiul Azam Ahmed	World Bank, Dhaka	Bangladesh	sahmed3@worldbank.org
Aysa Akter	Lecturer, Chittagong Univ. of Engineering and Technology (CUET)	Bangladesh	aysha_akter@yahoo.com
Elham Amini	Chief Inspector, Iranian Society of Urban Planners, Teheran	Iran	amini800@yahoo.com
Adebisi Araba	PhD student, Imperial College, London	Nigeria	bisiaraba@hotmail.com
Saul Arlosoroff	Director, Nat. Water Corporation, Tel Aviv	Israel	sarlo@inter.net.il
Arunkanti Biswas	Senior Scientist, NEERI, Kolkata	India	arun_kanti@yahoo.co.in
Lizette Cardenas	Executive Director, Solid Waste Management Association of the Philippines, Makati City	Philippines	lizette.cardenas@gmail.com
Bharati Chaturvedi	Director, Chintan, New Delhi	India	bharati@chintan-india.org
Poornima Chikarmane	Director, SNTD Women's University, Pune	India	chikkis@vsnl.com
Monir Alam Chowdhury	Chief Program Coordinator, PRISM, Khulna	Bangladesh	mnrchowdhury@yahoo.com
Jürg Christen	Managing Director, Skat, St-Gallen	Switzerland	juerg.christen@skat.ch
Adrian Coad	Advisor, Sharkia Governorate, Egypt	UK	adriancoad@link.net
Manus Coffey	Waste Management Consultant	Ireland	manuscoffey@eircom.net
Shubhagato Dasgupta	Senior Urban Specialist, World Bank, Delhi	India	sdasgupta1@worldbank.org
Sonia Dias	PhD student, Belo Horizonte	Brazil	soninha1962@yahoo.com.br
Patrick Dorvil	Consultant, AHT Group Essen Germany	Haiti	patdorvil@yahoo.com
Silke Drescher	Project Officer, SWM, Eawag/Sandec Duebendorf, Switzerland	Germany	silke.drescher@eawag.ch
Nagwa El Karawy	Projects Manager, AMA Arab Environment Co., Giza	Egypt	nagwae@amaegypt.com
Olfat El Sebaie	Professor, Alexandria Univ., High Institute. of Public Health	Egypt	elsebaieolfat@hotmail.com
Lucia Fernandez	Unidad Promocion Ambiental, Montevideo	Uruguay	lucifer@internet.com.uy
Phoebe Gubya	City Environment Officer, Kampala City Council	Uganda	phoebe.gubya@kcc.go.ug
Sanjay K. Gupta	Programme Director, Jaipur	India	sanjayg73@yahoo.co.uk
Jonathan Hecke	Environmental Sanitation Specialist, Skat, St-Gallen	Switzerland	jonathan.hecke@skat.ch
Maruful Hoque	Community Coordinator, JICA Team for SWM, Dhaka	Bangladesh	marufcebuat@yahoo.com

Laila Iskandar	Managing Director, Community and Institutional Development, Cairo	Egypt	cidegypt@cid.com.eg
Diana Iskрева	WSSCC rep. CEE and NIS NGO Earth Forever, Stara Zagora 6000	Bulgaria	diskreva@earthforever.org
Ragini Jain	Geetanjali Environment Improvement Society, Mumbai -400098	India	Tel: 022- 26660906 Mobile:09821280214
Rosario Jimenez	Associate Professor & College Secretary, University of Philippines, Quezon City	Philippines	weplan_at_surp@up.edu.ph
Michael Kabungo	Head Waste Management Unit Lusaka City Council	Zambia	kabungomk@yahoo.co.uk
Diptarup Kahali	Assistant Professor and Project Manager, All India Institute of Hygiene and Public Health, Kolkata	India	diptarupk@rediffmail.com
Godfrey Karume	Malindi Green Town Movement	Kenya	gkarume2005@yahoo.com
Kwi-Gon Kim	President, Seoul National University	Korea	kwigon@snu.ac.kr
Cecilia Kinuthia-Njenga	Human Settlements Officer, UN Habitat, Nairobi	Kenya	cecilia.njenga-kinuthia@unhabitat.org
Jessica Koehs	Project Coordinator, International Organisation for Migration, Buenos Aires, Argentina	USA	jkoehs@gmail.com
Kossi Sena Achille Kougbenya	Executive Director, Terre de la Jeunesse Culturelle Lome	Togo	sena200@yahoo.fr
Naresh Kumar	Manager, Bhavani Bio Organics Ltd.	India	n_naresh99@yahoo.com
David Kuria	Programme Manager, Practical Action, Nairobi	Kenya	david.kuria@practicalaction.or.ke
Reuben Lifuka	Environmental Consultant, Riverine Development Associates, Lusaka	Zambia	rlifuka@coppernet.zm
Markus Luecke	Team leader SWM. GTZ Al Bireh, West Bank	Germany	markus.luecke@gtz.de
Arunabha Majumder	Director, All India Institute of Hygiene and Public Health, Kolkata		arunabhamajumder@hotmail.com
Dinesh Raj Manandhar	Managing Director Development Network Kathmandu	Nepal	mrdinesh@wlink.com.np
Martin Medina	Professor, El Colegio de la Frontera Norte, Tijuana	Mexico USA	Medina2525@aol.com
Sohir Mourad Melik	General Manager, The Association for the Protection of the Environment, Cairo	Egypt	Yousriya@orascom.com
Marcela Miranda	Waste Management Consultant	Chile	marcelam@fdla.cl
Shoriful Alam Mondal	Environment Monitoring Officer PRISM Dhaka	Bangladesh	msalam_cee@yahoo.com
Rohit Mungra	Deputy General Manager, Central Water Authority	Mauritius	rammung@hotmail.com
Ashok Nanda	Chief Functionary, Vikas, Bhubaneswar	India	ashok@vikash.org
Sabina Nath	Consultant, SISSO, Kolkata	India	nandicn@rediffmail.com
Kumar Jyoti Nath	Chief Local Coord. for workshop, Sulabh / Govt. of West Bengal / IFH and others, Kolkata	India	kumarjyoti@rediffmail.com
Almitra Patel	Member, Supreme Court Committee for Solid Waste Management, Bangalore	India	almitrapatel@rediffmail.com
S.G.J. Rajkumar	Assistant General Manager, National Water Supply and Drainage Board, Colombo	Sri Lanka	nwsdbgcs@sltnet.lk
Shobbana Ramesh	Centre for Environment Studies, Anna University, Chennai	India	jai2202@yahoo.com
Nilmini Ranasinghe	Environmental Management Officer, Ministry of Environment, Battaramulla	Sri Lanka	ranasinghenilmini@yahoo.com
Ranga Rangarajan	Programme Co-ordinator, Chennai	India	alrangarajan@gmail.com
Jan Riemer	Senior Technical Advisor, Danida, Danish Ministry of Foreign Affairs, Copenhagen	Denmark	janrie@um.dk
Suhail Rishmawi	GTZ Project Advisor, Al Bireh	Palestine	suhail.rishmawi@gtz.de

Ljiljana Rodic-Wiersma	Solid waste management advisor, capacity building specialist and lecturer	Netherlands	l.rodic@planet.nl
Wilma Rodrigues	Saahas, Bangalore	India	response@saahas.org
Anselm Rosario	Executive Director, Waste Wise Trust, Bangalore	India	msss@vsnl.com
Jonathan Rouse	Independent consultant, Ashford, Middlesex	UK	j.r.rouse@gmail.com
Mosleh Uddin Sadeque	CEO, Institutional Development Services, Limited (IDSL) Dhaka	Bangladesh	mosleh@bdonline.com
Wa'el Safi	Project Advisor, GTZ Gaza	Palestine	wael.safi@gtz.de
Anne Scheinberg	Senior Advisor, WASTE, Gouda, Netherlands	USA	ascheinberg@waste.nl
Manfred Scheu	Technical Advisor, GTZ, Eschborn	Germany	manfred.scheu@gtz.de
Anil K. Singh	Sulabh, New Delhi	India	aksinghsacademy@dishnetdsl.net
Smita Sinha	Project Coordinator, Clean Jharkand Project, Nav Bharat Jagriti Kendra, Ranchi Jharkhand	India	nbjkran@rediffmail.com
Luiz Carlos Soares	Consultant, Rio de Janeiro	Brazil	lenalula@comcast.net
Joachim Stretz	Technical Advisor, GTZ, Maputo, Mozambique	Germany	joachim.stretz@gtz.de
Kumar Sunil	Scientist/Director, NEERI, Nagpur	India	sunil_neeri@iitb.ac.in
Arnold van de Klundert	Solid Waste Management Consultant, WASTE, Gouda	Netherlands	avdklundert@waste.nl
Caroline van der Voorden	Programme Officer, WSSCC, Geneva, Switzerland	Netherlands	vandervoordenc@who.int
George Wasonga	Dir. of Environment, Kisumu Municipal Council	Kenya	grwasonga@hotmail.com
Günter Wehenpohl	Asesor Principal del Proyecto, GTZ, Tlanlnepanitla, Mexico	Germany	guenther.wehenpohl@gtz.de
Andy Whiteman		UK	andywhiteman@wasteaware.org
SPM Prince William	Scientist NEERI Nagpur	India	prince14271@yahoo.com
Tariq Bin Yousuf	Institutional Development Services Limited (IDSL) Dhaka City Corporation	Bangladesh	tby@bangla.net

5.1.2 Photographs and statements

Participants were asked to complete the statement "*In my opinion, the most important thing to remember about solid waste management is (that). . .*".

This is what they wrote:



. . . collective roles and responsibilities lead to effective, efficient and sustainable solid waste management, world over.

Adebola Olugbenga Olayonka

Devise a collaborative institutional mechanism to enhance implementation of relevant strategies, rules and regulations, and standards among federal, provincial and other local governments



Iftekhar Ahmad

. . . it involves a large number of people interrelated by a complex relationship. Decision-makers should consider the effect of development programmes on a multitude of people whose livelihood depends on SWM.



Shafiul Azam Ahmed



. . . the user-friendly approach which involves all types of stakeholders in both top to bottom way

Aysha Akter



... sustainability should be the driving force behind research on the improvement of existing technologies and the development of novel ideas.

Adebisi Oluseun Araba



... awareness by decision-makers is essential, but I feel that it must coincide with reform and investments, which call for PSP and/or direct charges to the middle- and high-income households, commerce and industry to perform cost recovery and achieve economic and social benefits.

Saul Arlosoroff

... to remember that waste does not have to be a noxious entity; it could be a tool for addressing poverty



Bharati Chaturvedi



... we should not get polarised into ghettos of engineers and ghettos of community-oriented social scientists. We need a people-centred approach, but we also need landfills until we can do something better with our existing residues.

Adrian Coad



... to address issues on a municipality perspective: environmental, social and economical.

Sonia Dias



... to combine all treatment systems and to bundle all management systems (local government/NGO/private sector) and not to oppose each other.

Patrick Dorvil

... that it is organised and performed by people, giving a service to people. All technology is a tool for better performance.



Silke Drescher



... no-one can work alone in the SWM sector. We all need each other.

Nagwa El-Karawy



It is the second love of my life. It has a taste. Each element has to be cooked differently to get the whole taste and essence of SWM.

Prof Olfat El-Sebaie



... budgeting for the whole stream of waste management and budgetary allocations for this activity.

Phoebe Edith Gubya

... SWM stands for Sustainable Way to Manage



Md. Maruful Hoque



... that it is not just about engineering – it is about people.

Laila Iskandar



. . . solid waste management is really successful only if a holistic approach implemented with the understanding and participation of all stakeholders.

Diana Iskreva

. . . best practice of saving the environment and reducing the toxics and methane from waste.



Ragini S Jain

. . . to create a clean and healthy environment, producing eco-friendly and recyclable products



N L V J Naresh Kumar



. . . commitment on the part of city managers, participation of the community, motivation and services for NGOs, for eco-friendly as well as user-friendly collection, transportation, treatment recycling and disposal of solid waste

Arunabha Majumder



. . . to make our surroundings aesthetic, pollution-free and healthy

Md. Shoriful Alam Mondal

. . . it makes the world clean and generates employment.



Ashok Nanda

. . . to create awareness, segregate at source, reuse and recycle as much as possible conserve the precious natural resources gifted to us by the mother Earth for the next generations.



Sabina Nath



. . . create a cleaner environment. Enable participation of all stakeholders if they are properly mobilised. The informal sector plays an important role in recycling, but their contribution is not recognised.

S.G.J. Rajkumar



. . . the best management practices to be achieved, for if we think we can . . . we will, and if we do . . . we achieve.

Shobbana Ramesh

. . . public awareness on the importance of SWM and the adverse health impacts due to haphazard practices.



R M Nilmini Ranasinghe

. . . source segregation, community participation and localised strategies



A L Rangarajan



. . . institutional frameworks, key stakeholders and legal frameworks are complete and must be analysed in a systematic way to ensure capacity development, based on who should do what and reach a mutually agreed output in an efficient and socially acceptable way

Jan Riemer



. . . cleaner environment and better public health


Wilma Rodrigues

Possibilities of empowering informal sector of waste pickers to address the theme of the Workshop




Anselm Rosario

. . . that no matter how overwhelming it may seem, it's vital to accept and understand its complexity and interconnectedness.




Jonathan Rouse



. . . it is as importantly a challenge of better understanding of ground realities of transforming institutional cultures of building dynamics of partnership


Mosleh Uddin Sadeque



. . . SWM is so important and dynamic to bring together all these wonderful persons from all over the world.


Wa'el Safi

. . . give priority to the provision of basic services in urban areas and consider reuse and recycling as complementary activities




Manfred Scheu

. . . that it is quite complicated to get rid of it.




Joachim Stretz



. . . always remember the three Rs – Reduction, Reuse and Recycle


Kumar Sunil



. . . that the informal sector, if well organised into cooperatives or other forms of "formal" organisation, can be a strong partner to municipalities in the management of solid waste from poor neighbourhoods.


George Wasonga

. . . be realistic, but open to new ideas within an integrated solid waste management




Günther Wehenpohl

. . . about people and balancing different interests to create employment and economic development, and improve public health and the quality of the living environment.




Andy Whiteman



. . . solid waste is no more a "solid" to be wasted – it is a "soiled wealth" to be cleaned and reused.

SPM Prince William



. . . top-level political interest and commitment

Tariq bin Yousuf

I have nothing to add. I think you have said it all.

Still thinking? It is not easy to reduce a field as complex as solid waste management to a single issue. The following participants did not submit a statement, but were also very much involved in the workshop. Unfortunately we did not get photos of all participants, but most are here.



Felix Adegnika



Elham Amini



Lizette Cardenas

Poornima
Chikarmane

Jürg Christen



Manus Coffey



Shubhagato Dasgupta



Lucia Fernandez

Sanjay K. Gupta



Jonathan Hecke



Rosario Jimenez



Michael Kabungo



Diptarup Kahali



Godfrey Karume



Cecilia Kinuthia-Njenga



Jessica Koehs



Kossi Kougbena



David Kuria



Rueben Lifuka



Markus Luecke



Dinesh Manandhar



Martin Medina



Sohir Mourad Melik



Marcela Miranda



Rohit Mungra



Prof. K J Nath



Almitra Patel



Suhail Rishmawi



Ljiljana Rodić



Anne Scheinberg



Anil K. Singh



Luiz Carlos Soares



Kumar Sunil



Arnold van de Klundert



Carolien van der Voorden

5.2 Participants' evaluations of the Workshop

5.2.1 Key points

Participants were asked to write on cards what they considered to be the main message from the Workshop. Each participant was then asked to choose one which they considered the best. This is what they wrote and how they voted (the numbers of votes for each is shown in brackets). It is clear that there were philosophers and poets among us!

- Collaborative working – the coolest way of managing solid wastes. (4)
- Governance is the key to the way forward in solid waste management (3)
- Are we talking about halving or doubling the numbers of waste pickers by 2015? (3)
- Multi-mixture modernisation. (3)
- Solid waste management is a socio-economic issue rather than purely technical. Community participation is essential for success. (3)
- Private sector participation is closely linked to formalising the informal waste workers in co-operatives or small and medium enterprises. (3)
- Caring by recycling and health in equity (2)
- The need to concentrate or health for waste pickers (1)
- Quantify the health impact (1)
- To sit together to solve a common problem through knowledge sharing (1)
- Informal sector as private entrepreneurs (1)
- The huge potential of informal recycling and the challenge of securing occupational health (1)
- Insist to produce biodegradable, recyclable and eco-friendly to reduce waste. (1)
- Good workshop planning can help cover a great deal of ground and many different views. (1)
- The workshop unlocked my power of imagination through the cross-cutting issues of solid waste management. (1)
- Finding "formal" space for "informal" waste managers (1)
- This workshop was highly interactive and contributed to knowledge sharing and capacity building about solid waste management issues in low-income countries. (1)
- Solid waste management involves a complex relationship between various actors that should be considered while making service improvement plans. (1)
- We all need to work together. (1)
- The CWG has initiated the best thinking of networking through knowledge sharing in both directions (top-down and bottom-up) – which is appreciable. (1)
- Solid waste management should be seen in a holistic way, taking cognizance of all credible quantitative and qualitative evidence. (1)
- Promote job creation for all low-income groups through labour-intensive collection and treatment systems. (1)
- Privatisation is not the solution for solid waste management, especially when foreign companies are contracted. (1)
- Conserve natural resources. Reuse, recycle or minimise solid wastes, but not at the cost of public health. Protect the environment by appropriate and affordable technology. Spread awareness at all levels. (1)
- It is not the lack of public awareness that constrains sector reform and investments – it is the objective fact that other sectors hurt the society and its members much more. (1)
- CWG: Interesting group, sound data, multidimensional, democratic.
- Make solid waste management the priority of decision-makers.
- Light of hope towards global SWM menace
- The "informal" sector is here to stay.
- The dynamic and sensitive relationship between "informal" and private sector.
- Raising awareness and networking are crucial for better solid waste management.
- The importance (often unrecognised) of the informal sector in MSWM
- How to achieve sustainable waste management.
- We need a more flexible and creative view of cost recovery.
- We (the world) need a global trade association of waste pickers/recyclers.
- A continuous re-appraisal of solid waste management methods is necessary to improve on current techniques and avoid mistakes made by others.
- No children in the dumpsites and recognising rag pickers as professionals.
- Solid waste pickers should be given more attention in my country.
- So many similar activities worldwide! Why don't we learn from each other? Let's become active CWG members.
- Ranking cities depending on how they perform in solid waste management.
- We need to develop a strategy to put solid waste management on the agenda at all levels.
- Whatever the system: formal/informal, private/public, municipalities have a crucial role. How can we support them?
- Community participation through mobilisation is a must.

- I see drops fall into the growing ocean of knowledge. From the coast you can only see the surface . . . When you swim you can go deeper . . . When you dive you may drown. But what to do with that ocean of knowledge?
- Sharing of knowledge on appropriate technology practices internationally.
- Source separation, primary collection and transportation must be looked at as a total system and not considered in isolation.

5.2.2 Evaluation forms

Reproduced below is the form used to obtain the participants' evaluation of the Workshop. This evaluation exercise was carried out after the site visit on Day 4. 44 replies were received. The replies that were indicated by writing a X in a box are shown as a percentage of those responding to the particular question, and the comments written in response to the open questions are reproduced in italics. Numbers in brackets after a comment indicate the number of people who used the same words in their answer.

Questionnaire for evaluating the workshop

Please take a few minutes to let us know your opinion about the workshop and your suggestions for making subsequent workshops more effective. When you have completed it please return it to the workshop organisers before you leave. Additional comments, beyond the scope of the questions, are welcome.

Signal your answers by writing a X in each appropriate box and by adding additional comments. Use the back of the form if you need additional space.

There is no need to write your name on, or sign, this questionnaire.

1. Are you glad that you came? (Please write a X in the appropriate box.)

<i>Yes, it was a useful experience</i>	100%	a	44 replies
<i>I am not sure. It was not what I expected</i>	0%	b	
<i>No, I wish that I had not come</i>	0%	c	

Please add a comment if there is more that you would like to explain.

There should have been more about technical and scientific practices in SWM / I am very glad to be here, it was very important for me / It was really valuable to share experiences / Very good and appropriately organised. / It offered the opportunity to develop contacts. / It is the best conference I have been to in recent memory / More practical experience and new strategy for solving some SWM problems /

2. The general content of the workshop

Were the papers and the discussions of the workshop what you expected, interesting and useful for your work?

<i>Yes, the content overall was relevant and interesting</i>	80%	a
<i>To some extent. Some of the subject matter was not what I had expected</i>	20%	b
<i>No, the subjects and theme were not useful for me</i>	0%	c

44 replies

Please add a comment if there is more that you would like to explain, or to let us know what did not meet your expectations.

There should have been clear-cut guidelines for landfill design, primary collection and primary collection equipment / especially the papers about the informal sector / I want some books on landfills because they are also a part of SWM; however, social aspects were more discussed here. / Most of the presentations handled the issues of MSWM and health ably, but did not link them to MDGs. / A few too many descriptive papers in between a few really excellent ones. / All the discussion cover few topics / 50% of the papers very good, 20% OK, 30% well below expectation / Specially on informal sectors / One should try to take only presentations of case studies which allow and provide general conclusion or visions. Just presenting how it works is not sufficient. /

3. **The balance of activities.** Would you have liked more or less of any of the types of activities of the workshop? Please indicate if **too much** time was devoted to this activity, or **not enough** time, or whether the time allowed for each activity was **about right**.

	<i>too much</i>	<i>about right, OK</i>	<i>not enough</i>	replies
a. Presentation of papers	10%	90%	0%	44
b. Thematic working groups	1%	69%	30%	42
c. Open, plenary discussion	0%	77%	23%	44
d. Debates	6%	74%	20%	44
e. Presentation of the CWG	5%	77%	18%	41
e. Open sessions in the evenings	12%	67%	21%	41
f. Time to talk to other participants, see posters	2%	45%	52%	42
g. Site visits	0%	75%	25%	36

4. The overall duration of the workshop

Was the total duration of the workshop (4.5 days including site visit)

<i>too short</i>	5%	<i>OK, about right</i>	84%	<i>too long</i>	11%	44 replies
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5. Thematic coverage

If the same answer has been given by more than one participant, the number of participants giving this answer is shown in brackets – for example *cost recovery (2)* indicates that two participants wrote “cost recovery” in answer to a question.

- a) Which topics should have been given **more** time and attention?

privatisation / strategic plan for all stakeholders to work together / recycling and informal waste pickers / informal sector / health issues and interventions / The role of the informal sector / community participation issues vis-à-vis linkages with local government / coverage of all topics was adequate / Informal sector and community based systems / cost recovery (2) / health (2) / appropriate technologies / informal sector / practical aspects of SWM / the links between health and SWM / awareness programmes / public participation, working with local communities / Informal sector and private sector / MDGs / community-based management, policy / Practical experience on landfills and other technical issues / All topics were adequately covered. / Cost recovery / Health aspects – at least to be more relevant to the theme / Specific issues / Recycling sector,

modernisation, ISWM / Approaches to primary and secondary waste collection / education and also community-based / The relationship between private sector and waste pickers / the management of health / good practice of collection etc presented by operators / Informal sector and private sector participation (there should be a session for commissioners and mayors). / informal sector, private sector participation / Input on MDGs. Strategic discussion on CWG, CDM as it is very relevant for ISWM. / Generally the coverage was good, given the focus of the workshop.

b) Which topics should have been given **less** time and attention?

informal sector (2) / healthcare waste management / composting (2) / all topics were important to me / everything about right l social issues i.e. public private partnership and informal sector / capacity building; sector organisation and modernisation / Description, scavenger protection 101 (basic descriptive as opposed to 301 and 401, more advanced and more reflective) / composting / what is the new in recycling processes / data collection /

c) Which topics that were not included at all should have been included?

health impact / the right of waste producers to get service / engineered landfill / health (maybe with the participation of doctors) / (1) It would have been nice to hear a testimony from the informal sector – a success story from here in India (2) Information on funding. / rural SWM issues / problem of ownership, dissemination of experiences; how to put it into practice. / local authority responsibility / policy formulation / management, less valuable waste / Integrated approach with respect to overall respect for the environment was not stressed; gender issues in SWM / good innovative low-cost practices improving directly the lives of people in local communities / gender concerns / linkage with the local government / Technical works and experts from some countries like Japan where they already manage their SWM system / Overall MSWM process / At least one technical session on hard science/engineering/management. / Municipal staff should have been invited for a better outcome (active participation) / Global agenda of SWM / very little on organic recovery. / how a country like US deals with its garbage / primary collection, linking municipal with informal collection / Equipment, accessories for waste management, catalogue display of different machinery. / Some more emphasis on medical wastes and electronic wastes and their management. /

6. Do you have any comments about

a) The composition of the participants (geographical, thematic distribution etc.)?

OK (3) / I think we need more Latin-American participation, and also waste pickers and recyclers / More from the medical field and actual representatives of the informal sector / There should be a free half day so that participants can visit the national heritage of the host country / very good composition of participants / coverage was good; what about Chinese? / good (2) / very good / South-east Asia and South America need more representation. / more [presenters from Africa needed / Was very good, but we should also get more experiences from developed countries. / Fine, It would have been useful to have had some waste pickers present. / Well done / excellent / geographically OK / OK. I think although it's a work for low- and middle-income countries you invite some experts from university and developing countries. / Fine / Well blended cross-section of specialities / The composition was good, but more municipal representation is needed. / Quite good, but the lack of direct telephones from rooms awkward / Few people from Latin America / We need more municipal decision-makers and practitioners. / China was not represented, otherwise the participants were well distributed according to geographical region, gender and sector. Perhaps there should be more "hard" engineers and business-men next time. / More participants on emerging issues that need to be addressed immediately. / Stimulating mixture of nations, more municipality people needed. / Yes, very good. 4 out of 5 continents ranging from the World Bank – policy to "mango tree" practitioners.

b) The accommodation and domestic arrangements?

very good(3) / OK, considering not enough donation for all / all participants should be residential except local co-ordinating staff / really nice, maybe the village was too far from the centre of Kolkata / Good. beautiful place, but it would also be nice to be closer to town. / excellent (2) / good accommodation except for too much Indian food / very good (well organised) / good (3) / fine, but costly / accommodation OK, service good, food very good / everything was fine / air tickets / Hotel is too isolated and far from the city. Having a roommate is just bad taste. Food at the hotel pretty bad. Internet access awful. / Excellent maybe kind of isolated from the local community and their problems. / I was stuck with a guy who snored like a vexed hyena! / OK but far

from the city centre, so it was difficult to get acquainted with the city. / Nice / Good / OK, but should have given the participants to know more about the city – too far. / The hotel is too far from the city / Could be better / Excellent after supplementary travel agency support. / OK but a little far from the city of Kolkata. / OK / It was fine / Good but expensive /Extremely good, very pleasing /very cordial / Very exclusive. Could be a bit simpler but I enjoyed it. / Lovely, but would have been content with something much simpler – though it would be a shame to compromise the actual conference facilities. It is annoying when the conference facilities are awful and I understand that often decent facilities and accommodation go hand-in-hand.

c) The preparations for the workshop?

excellent (5) / good (6) / I would have liked more time to prepare myself for the workshop / wonderful / very professional; applause for the local team / very good – professional / very good (3) / too hurried / well done (2) / Nice with limited resources / Adequate / The hotel management should have been briefed on how to handle the participants – there was some confusion regarding checking-in, ticket reconfirmation etc. / A bit too last-minute / OK / We need follow up through the CWG, so that they always keep in touch with all participants by sending up-dates. / Meticulous. A good learning on how to organise workshops. / Short notice and too much to read for preparations (too detailed organisational assessment). / Very challenging volume of stuff to get through. I wonder if good discussion topics could have just grown out to the workshop rather than needing to be planned beforehand.

7. Any other comments relating to the organisation of the workshop?

arrangements for reconfirming flights were not adequate / should be more vibrant co-ordination among the possible member or participant / congratulations / I would like them to improve our own situations in our own countries (policies/municipalities/governments), not just to get to know one another / It would have been nice to have had time to just see Kolkata. I recommend an afternoon off. / Congratulations! / I know it must have been loads of work and we all really appreciate it. / I wanted the organisers to allocate at least half a day for shopping as participants had to take out time for this at the expense of some important programs. / well done, thanks / Thanks and well done! / Nothing special except it attracts the elite / The organisers were afraid to discuss more about technologies. / Provide adequate notice to allow for new participants to prepare themselves / There was not enough time. Information on accommodation and funding was not sent out well in advance so as to orientate participants. / Adrian and Jonathan did great work both for the preparation and the conference itself. The organisers should have selected and invited some students from low- and middle-income countries interested in SWM and some government officials involved in SWM, especially from the host country. The hotel management was not competent enough to handle international participants – no \$ exchange, poor ticket reconfirmation service, inadequate internet access etc / perfect / It would have been better to build in a free afternoon in the middle for city visits. The quality of the papers was uneven and could have been better with a longer lead time, more peer review and coaching. / Unfortunately the site visits were not available for participants who had to participate on the planning session on the 5th. / Very well organised / Smooth organisation. A bit chaotic regarding flight reconfirmation. But congratulations to the team. / The presentation of the papers was much better than in Dar es Salaam when it felt like they went on too long and there were too many. The strict(ish) time keeping of presenters was appreciated by all. The programme was a bit too packed. / Very smooth. Thank you.

8. Do you have any comments about the results or outputs of the workshop?

Some issues were opened up and different dialogues for all participants; we did not all agree / It would be nice to have copies of the PowerPoint presentations. / They should be widely circulated worldwide. I also believe that the outputs will go a long way in perfecting sustainable solid waste management strategies. / excellent / I believe that a lot was achieved in this workshop. CWG should continue with these workshops but should include more municipal workers / I am happy. / The results will be really high because we shared many ideas and experiences. / Waiting to see concrete outputs – workplan and proposals / It will be made great if the are made soon available on the CWG website. / I hope to hear trends of s..... improvements soon. / The output of my enriched knowledge from this workshop will be dedicated to improving my students' research and practical work. / practical and be effective for future implementation / I still don't know what is the output; however I think it will help us in future also if we have participated there. / The Workshop did not achieve linking MSWM, Health and MDGs. / I was surprised not to find a presentation by Kolkata Municipality. / Results and outputs need to be shared with the very implementers. It is just the end of the beginning and should continue. Best wishes / Too many dominant people chairing or recording sessions, who think too highly of themselves and their ideas and priorities. / Some results are too ambitious. More inputs from municipal practitioners would

improve the outputs. / Media relations – Though there was a Press Brief on day 1, it should have been on day 5 to brief the media on what they saw in the field and about learning in the workshop. / Excellent dissemination of knowledge, suggestions and ideas / The workshop was a bit fading out – energy dissipated and there was no clear message at the end. / I thought the debates were excellent. I didn't feel the working groups worked so well or that they came out with the concrete recommendations required . . . or indeed that this would have been possible.

Editor's comments

After writing in all these responses, several impressions were suggested to the editor

- In general, the responses to the evaluation were very positive, suggesting that the Workshop had been satisfactorily planned and implemented.
- The introduction of the debates was a new development, not used before at CWG workshops. They seem to have met with the approval of the participants, 20% indicating that not enough time was devoted to them and only 6% saying that they were given too much time. There were three debates, each lasting about 40 minutes.
- The informal evening programme (dubbed "Open University") was popular and well attended, continuing on occasions until after 10 pm. 21% of the respondents would have liked more.
- Some participants appeared to expect the workshop to cover all aspects of solid waste management, and saw it more as a training event than as an opportunity to refine approaches and prepare strategies. This suggests that the purpose of the workshop had not been communicated clearly or that participants had their own assumptions about the purpose of the meeting, in spite of the information that had been sent to them.
- Some indicated that there should have been more time devoted to some elements of the programme, while the time devoted to others was satisfactory, and yet they noted that the time allowed for the workshop was too long. Since they did not suggest any element that should be reduced or removed, it is hard to understand how more could be fitted into a shorter meeting.
- Several complained that the programme did not allow time for shopping and sightseeing, and just over half suggested that they would have liked more time for meeting others and studying the posters. The organisers were clearly trying to pack as much as possible into the available time.
- At such workshops, it is generally the presenters from NGOs and international organisations who present in the best way. Practitioners (such as from municipalities) have less experience in making presentations and fewer opportunities for action research, so their papers are sometimes perceived as being of a lower standard. There is a clear demand for a greater representation of municipal officials and other "practitioners", but it may also be necessary to modify the programme so that such practitioners feel able to play a larger part in the discussions and other contributions. Small group interaction may be a more suitable mechanism for learning from practitioners than papers and plenary discussion, but even in the small groups there were problems of domination by certain participants, so that others who were not so *at home* in this environment made little contribution in the working groups. The answer to this dilemma may be to provide more structure to small group discussions, so that practitioners can prepare their contributions, as was done at the previous workshop in Dar es Salaam when the leaders of small enterprises addressed small groups.

5.3 Summary of the decisions taken at the CWG Planning Workshop

Timing: 5 and 6 February 2006, immediately after the main workshop

Participants: Juerg Christen, Adrian Coad, Manfred Scheu, Arnold van de Klundert, Sonia Maria Dias (minutes), David Kuria, Anne Scheinberg, Jonathan Hecke, Martin Medina, Andy Whiteman (moderator), Laila Iskandar, Felix Césaire Adegnika, Caroline van der Voorden, Sanjay Gupta, Rueben Lifuka, Silke Drescher, Günther Wehenpohl.

5.3.1 Main points discussed

- Projects/activities should represent both northern and low- and middle-income countries.
- In order to enlarge audience it is important to have CWG's publications not only in English but also in other languages, such as: Spanish, Arabic, French and possibly also Portuguese.
- Some issues that need to be addressed: safety issues; capacity building for media involvement; guidelines for the organization of pickers' cooperatives, cost recovery, informal sector documentation, best and worst practices, improvement in training of engineers and others.
- There is a need for CWG to remain informal but also to identify partners committed to its main principles and willing to work on a voluntary basis. There is a need to strengthen linkages with different regions and to have different linkages within the regions.
- There is a difference between a CWG member and a CWG partner. What is the basis of agreement for an organization to be accepted as CWG partner? Its acceptance of a set of principles (to sign a memorandum of understanding)?
- **Primary targets** for partners: solid waste associations; associations of mayors (regional or international), local experts practitioners, solid waste managers, MSE and CBO owners and leaders.
- Important also to try to strengthen links with universities.
- The need to address more of the social cultural issues in SWM and also of a stronger link with the MDGs.
- Some questions for further debates: "Who makes the decisions for the CWG?"; "Who will manage projects?"; "How to avoid allocation of proposals based on personal interests?" "What is voluntary and what is not amongst members?" "Should core group members be allowed to take up assignments on a contract basis?"

5.3.2 Decisions taken

- The Secretariat will prepare a database of CWG members' expertise.
- In consultation with the Core Group, the Secretariat will prepare a list of answers to frequently-asked questions to use in answering enquiries.
- In order to make different views available to enquirers who ask the CWG for information or guidance, the Secretariat will consult diverse people so that different views will be sent to the enquirer.
- Instead of having focal points, it is important to have network partners with the role of linking up with other organizations and local practitioners; of sharing knowledge and organizing events.
- Drawing up a draft "memorandum of understanding".
- Establish contacts between regional WSSCC representatives and local CWG members.
- CWG branding will be put on publications prepared by members.
- The Secretariat will complete the logframe and submit it to the Core Group for discussion and finalisation.
- The Secretariat will then develop an action plan based on the inputs of the Core Group.
- A concept proposal for an advocacy pack will be produced. The advocacy pack should be geared towards decision-makers.
- A global project on informal sector participation will be formulated.
- The CWG will organise its own regional workshops, but also identify organizers of forthcoming workshops and conferences as possible partners for regional CWG workshops.
- Next global CWG workshop will be held preferably in West Africa (Senegal or Gambia) in late 2007.

- The CWG itself will not bid for consultancies.
- The Secretariat will work out a proposal for its terms of reference, to be approved by the Core Group.
- A draft code of conduct [or method of operation] for the Core Group will be prepared to clarify the roles and responsibilities of the members of the Core Group, criteria for the allocation of assignments and projects, etc. to be discussed within the Core Group.