Workshop Report

Micro and Small Enterprises Involvement in Municipal Solid Waste Management in Developing Countries

14-18 October 1996

SKAT

SDC
Swiss Agency
for Development
and Cooperation

Urban Management Programme

UMP/SDC Collaborative Programme
on Municipal Solid Waste Management in Low-income Countries

Cairo, Egypt

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Abbreviations and Acronyms

ACEPESA	Central Executor Association of Economic and Health Projects
APE	Association for the Protection of the Environment
CDG	Carl Duisberg Gesellschaft
CEMPRE	Compromisso Empresarial Para Reciclagem
CEPIS	Pan American Centre for Environmental Engineering and Sciences
CREPA	Centre Régional pour l'Eau et l'Assainissment
EAWAG	Swiss Federal Research Institute for Water Supply, Sanitation and Water Resources Management
EQI	Environmental Quality International
ESA	External Support Agency
EXNORA	EXcellent NOvel and RAdical Ideas
GTZ	German Agency for Technical Cooperation
IAGU	Institut Africain de Gestion Urbaine
IBRD	International Bank for Reconstruction and Development (World Bank)
ICED	International Centre for Environment and Development
IHS	Institute for Housing and Urban Development
ILO	International Labour Organisation
IPES	Institute for the Development of the Social Economy
ISWA	International Solid Waste Association
ITN	International Training Network
LAC	Latin America and Caribbean
ME	Micro-Enterprise
MSE	Micro and Small Enterprise
MSWM	Municipal Solid Waste Management
NCNW	National Council of Negro Women
NETWAS	Network for Water and Sanitation International
NGO	Non-Governmental Organisation
NIMBY	Not in my backyard
PROA	Centre for Integrated Urban Development Services
PROMICRO	Innovative Micro-enterprise Development Projects in Central America
SANDEC	Centre for Water and Sanitation for Developing Countries (EAWAG)
SDC	Swiss Agency for Development and Cooperation
SKAT	Swiss Centre for Development Cooperation in Technology and Management
SW	Solid Waste
TWURD	Urban Development Division (World Bank)
UMP	Urban Management Programme
UNCHS	United Nations Centre for Human Settlement (Habitat)
UNCRD	United Nations Centre for Regional Development
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WASTE	Advisors on Urban Environment and Development
WEDC	Water, Engineering and Development Centre
WHO	World Health Organisation

Executive Summary

Upon the initiative of the Urban Management Programme (UMP) and the Swiss Agency for Development and Cooperation (SDC), the Collaborative Group on Municipal Solid Waste Management (MSWM) in Low-income Countries invited over sixty participants - representatives of Micro and Small Enterprises (MSEs) and sector professionals from Africa, the Arab States, Asia-Pacific, and the Latin America and Caribbean regions as well as partners from selected external support agencies - to Cairo, Egypt, from the 14-18 October 1996 to exchange information on activities and promote learning on better strategies for enhancing the potential of Micro and Small Enterprises in the delivery of MSWM services.

The workshop provided a state-of-the-art global information on the involvement of MSEs in MSWM. The main highlights of the workshop agenda were as follows: Opening ceremony by Dr Mustafa Tolba; Overview presentation by Carl Bartone (World Bank-TWURD); Presentation of 25 Case Studies by regional participants; Special Presentation on Trends in Information Exchange and Communication by Bill Sims (Together Foundation); Working Group and Plenary Discussion Sessions; and Formulation of the Cairo Declaration for MSEs Involvement in MSWM Service Delivery. A visit to the Zabbaleen waste recycling community in Cairo was organised as part of the workshop. The Assistant Secretary General of UNCHS (Habitat), Dr. Wally N'Dow attended one of the sessions of the workshop.

After 4 days of case study presentation, extensive and intensive discussions in both plenary and working group sessions, the meeting ended with the **Cairo Declaration of Principles for Micro and Small Enterprises Involvement in MSWM Service Delivery** which is to form the basis for expanding the participation of Micro and Small Enterprises in MSWM. The key elements of the Cairo Declaration are that:

- Micro and Small Enterprises could effectively contribute to resolving the shortage in solid waste service delivery particularly to low-income urban areas where community relations are important, and where direct user charges may be needed. They can also facilitate upgrading the status, earnings and working conditions for waste pickers and recyclers, support employment generation, poverty alleviation and contribute to a healthy and sustainable environment.
- For MSEs contribution to be effective, the following constraints need to be addressed: legitimisation and contractual commitments; capital finance and cost recovery; capacity building in technical skills; citizen responsibility and public cooperation; and the enabling environment for scaling-up operations.
- To achieve lasting results MSE activities in MSWM should be integrated into the overall urban development planning and management process.

The meeting also endorsed the need for continuous capacity building and exchange of information within and across regions as a means of consolidating the learning process and the sharing of best practices. A special round table meeting of the Collaborative Group on MSWM in Low-income Countries was held the next day after the workshop. The 1997 meeting is planned to take place in the Latin America and Caribbean region and will focus on the challenges of waste disposal.

Workshop Organisers:	Urban Management Programme (Regional Support Office for Arab States) Swiss Centre for Development Cooperation in Technology and Management (SKAT)
Credit for Financial Support:	Swiss Agency for Development and Cooperation (SDC)
Workshop Facilitators:	Carl Bartone (World Bank-TWURD), Mounir Neamatalla (UMP-EQI), Sandra Cointreau-Levine (MSW Consultant), Ahmed S. Akabaoui (EQI), Bill Sims (Together Foundation), Peter Schübeler (WAP), Jürg Christen and Ato Brown (SKAT)

This workshop report was put together by Ato Brown and Jürg Christen of SKAT. All clarifications and questions are to be directed to SKAT. The contents are the observations of the authors and do not constitute in any way an official position of the UMP or the SDC.

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1. Introduction

1.1 Background

Municipal Solid Waste Management (MSWM) represents one of the ever growing problems facing municipal authorities all over the world. In many developing countries, MSWM has reached crisis proportions. The exponential growth of urban population coupled with the physical expansion and sprawling of cities, diminishing financial resources and inadequate management capacity have all contributed towards the poor state of waste management and urban decay. The negative impact on health, economic activity (e.g. tourism) and overall quality of life has reached alarming proportions in many cities in the developing world.

Provision of MSWM services has in most cities in developing countries been the mandate of the public sector or municipalities. Most municipalities have approached waste management from the bureaucratic and technocratic angle. This approach is in most cases donor driven and based on periodic equipment donations. The experience over the years is that this approach has not yielded the expected results. On a relatively positive note, this dismal performance of the public sector has brought to the fore a generation of informal and formal **Micro and Small Enterprises (MSEs)** which have in the past decade been playing a significant role in the delivery of municipal waste management. These services range from waste collection, recycling and re-use of waste in all its forms and along its cycle from storage to disposal as well as provide opportunities for combating unemployment and poverty. Little official recognition is however accorded to these efforts.

The role of MSEs as engines of growth and employment in developing countries is well documented. Successful interventions of MSEs in small scale industry, retail business and the service sector are also well known but experience in the MSWM area on a global scale is new even though some successful cases exist in several countries. Participants at the Ittingen International Workshop on MSWM in low-income countries (UMP/SDC collaborative meeting, April 1995), agreed that the enhanced involvement of MSEs in MSWM constitute a major institutional reform that has prospect for promoting indigenous solutions to the waste management problem in most developing countries. The workshop was thus a follow-up of the Ittingen meeting and is located within the broader context of public-private partnership in MSWM.

1.2 Scope and Purpose of Workshop

The overall objective of the Cairo Workshop was to ensure comprehensive information exchange on the contribution of MSEs in MSWM and to examine better strategies of ensuring their enhanced participation.

BOX 1:

Objectives of the Workshop

- promote a better global understanding (through information exchange and experience sharing) of the role of MSEs in MSWM
- examine the strengths, weaknesses, opportunities and threats to MSEs in MSWM
- gain a better understanding of inherent institutional and financial issues surrounding MSEs participation in MSWM as well as demarcate areas of need
- examine mechanisms for promoting better inter-regional learning and transfer of innovation
- help establish linkages between ME development programmes and MSEs seeking to enter MSWM field

The workshop provided a state-of-the-art global information on the involvement of MSEs in MSWM and brought to the fore the contribution as well as issues and challenges that characterise the work of MSEs in municipal solid waste and environmental management. The various case studies threw more light on the broad range of MSE activities such as collection, recycling and re-use of waste in small scale industry. A balance between activities of formal and informal MSEs was assured in the programming of the workshop.

1.3 Workshop Participation and Case Studies

The workshop brought together about 60 professionals consisting of a diversified group of municipal managers, sector practitioners, non-governmental organisations, multilateral and bilateral agencies and experts in the fields of environment and MSEs involved in waste collection, recycling and re-use. The full list of participants together with their brief profiles is attached as Annex 1. These include representatives from the UNDP, UNCHS (Habitat), UNEP, UNCRD, WHO (Nancy Office), World Bank, UMP, ILO, SDC, GTZ, USAID, NCNW-EGYPT PVO, SKAT, SANDEC, WASTE Advisors in Environment and Development, CDG, IPES, ACEPESA, CEMPRE, SUR Professionales, PROA, PROMICRO, IAGU, CREPA, NETWAS, Colan Consult, Institute for Housing and Urban Development (IHS), EXNORA, Vincentian Missionaries (VMSDFI), Media Centre for Development, Sustainable Cities Programme (SDP), EQI, APE and the Alexandria Business Association.

Case studies presented at the workshop included those from - Tanzania - Ghana - Senegal - Kenya - Burkina Faso - Mozambique - South Africa - Egypt - Jordan - Yemen - Lebanon - Thailand - India - The Philippines - Bangladesh - Costa Rica - Bolivia - Brazil - Peru - and Columbia. The workshop was moderated by an advisory group consisting of Carl Bartone (World Bank-TWURD), Mounir Neamatalla (UMP-EQI), Sandra Cointreau-Levine (MSW Consultant), Ahmed S. Akabaoui (Moderator/ EQI), Bill Sims (Together Foundation), Peter Schübeler (WAP), Jürg Christen and Ato Brown (SKAT).

2. Proceedings of the Workshop

2.1 Workshop Process

The main highlights of the workshop agenda (Annex 2) were as follows: Opening ceremony by Dr Mustafa Tolba; Overview presentation by Carl Bartone (World Bank-TWURD); Presentation of 25 Case Studies by regional participants; Special Presentation on Trends in Information Exchange and Communication by Bill Sims (Together Foundation); Working Group and Plenary Discussion Sessions; Press briefing; and the Formulation of the Cairo Declaration for MSEs Involvement in MSWM Service Delivery. A visit to the Zabbaleen waste recycling community in Cairo was organised as part of the workshop. A special Round Table meeting of the Collaborative Group on MSWM in Low-income Countries was also held a day after the workshop.

Session 1: Opening Session

"Waste is a resource in the wrong place at the wrong time"
Mustafa Tolba, former UNEP Executive Director

The session consisted of five brief introductory remarks by the co-sponsors and collaborators of the workshop. **Dr. Mounir Neamatalla**, of the Environmental Quality International and UMP coordinator for the Arab States Support Office, welcomed all participants to Cairo and introduced Dr Tolba to give the opening remarks.

Dr. Mustafa Tolba, former Executive Director of UNEP and currently the President of the International Centre for Environment and Development (ICED) opened the workshop by stating that solid waste management is a troublesome issue for developing countries. The crucial question is how to transform an environmental problem into a development process which leads to the establishment of new jobs. He defined waste as a resource in the wrong place at the wrong time. If used in the right way waste becomes a resource like any other natural resource. He further indicated that it is possible to transform solid waste into job creation activities through recycling, expansion of agricultural production by using waste as an organic fertiliser, and small industries where people may work on the small vegetable plots, greenhouses, transportation, and recycling. SWM, he remarked, brings into play a whole variety of topics: gender, enterprise development, role of youth and poor, urban agricultural expansion, etc. He concluded his remarks with the hope that the workshop will come out with a series of options at everyone's disposal and to set up reference material from these options for future action.

Mr. Peter Künzi of the Swiss Agency for Development and Cooperation (SDC) complimented the opening address by calling the attention of participants to the fact that in a few years ahead more than half the population of the world will live in cities and will have to face the challenges of how to cope with demographic growth and its social dynamics, the creation of employment to reduce poverty and environmental problems. He went on to say that SWM touches on all these challenges and has a central role in SDC's urban development policy. MSEs in SWM could work well in collaboration at some point to meet these pressing challenges and Cairo would be an ideal place to get a closer look at the reality of this.

Both **Ms. Samia Gergis and Mr. Alioune Badiane of UNDP Cairo office and UMP coordinator for the Africa region** respectively, reiterated the importance the UNDP and its partners the World Bank and UNCHS attach to the environmental issues and called on participants to continue the search for sustainable and comprehensive solution to all aspects of waste management and including disposal options in order to help advance the tenets of the Rio Declaration and meet the targets of country level Agenda 21.

Session 2: Keynote Address

"The MSE model that is most successful is the one set up on basic commercial principles and good business practice".....Carl Bartone, World Bank

Carl Bartone of the Urban Development Division of the World Bank focused on four main points in the keynote address which was co-authored by Roland Schertenleib of SANDEC: (i) The role of MSEs in Urban Environmental Management, (ii) The findings of the SANDEC study, (iii) The unresolved questions about the involvement of ME in SWM and (iv) The challenge and expectations of the workshop.

BOX 2:

Micro and Small Enterprises (MSEs)

General Definitions:

Definitions vary from country to country and also context. Micro and Small Enterprises can be:

1. Traditional/artisanal (1-6 workers).
2. Small Scale (5 and up to 15-20 workers).
3. Cooperative association of workers who share ownership in management. This type is not necessarily micro, usually it is large and self-organised.

General Characteristics:

- MSEs make up 30-80% of employment in the Third World.
- They are located in informal economy.
- They have low level of capitalisation and little technology which is often obsolete.
- Managers and workers are often unskilled.
- The lack of information on MSEs impedes improvement.

A Micro and Small Enterprise is here defined as a service delivery or production business, usually low capital intensive and consisting of an individual or up to about 20 persons formally registered or operating informally in an area.

After providing an operational definition and characteristics of Micro and Small Enterprises in MSWM, he went on to recount the positive contribution of MSEs in the delivery of infrastructure and services in the areas of drainage, waste collection and in sewerage provision and maintenance as well as in the promotion of conservation and sustainable resource use such as collecting and recycling, and the use of organic waste for agriculture. However, these activities are not without problems. Among these are pollution from small industrial enterprises such as textile dyeing companies, tanneries, automobile repair, dry cleaning, etc. Some MSEs are located in low-income areas with occupational and hygiene problems as well as many noted health hazards associated with human waste usage in agriculture.

The presentation notes used for the keynote address are attached as Annex 3. The conclusions of an extensive SANDEC study on the subject were presented in the address. Among these conclusions, the keys to successful MSE involvement in MSWM are as follows:

1. Collaboration between the public authorities and NGOs. There is sometimes a failure to integrate NGO primary collection with municipal secondary collection. Promising initiatives fail when not supported by public authorities. There must be orientation towards service delivery.
2. Provide information to users and involve them in decisions. Find ways of convincing households to support these projects and raise their awareness through education.

3. It is important to select sustainable technologies, simple and at low cost, such as manually operated carts/tricycles to ensure easy transfer between primary and secondary collection systems.

4. Assessment and transparent recovery of cost. There is poor knowledge of costs. Donations are not enough, there is need for a self-financing system. Simple fee-collection ensures stability. Some capital investment (such as loans) is required.

In a nutshell, the MSE model that is most successful is the one set up on basic commercial principles and good business practice. Mr Bartone ended his address with a number of unresolved questions and set the agenda for deliberations by the workshop participants.

Session 3: Presentation of Case Studies

The focal point during the workshop was the presentation of case studies and sharing of experiences. This activity lasted for one and a half days and one special evening session. The presentations were organised by regions with each session presided over by the respective UMP regional coordinator. Each session started with a regional overview followed by country specific and/or activity specific case studies. The list of case studies (28 in total) and presenters is attached as Annex 4. Also attached are sample summary sheets of some of the case studies (Annex 5). The full set of case studies is available on request from SKAT. The order and categories of presentations are outlined below:

Table 1: Case Studies Presentation and Sharing of Experiences

Region	Category			
	Overview Presenter	**Collection**	**Recycling/Re-use**	**Promotion/Others**
Arab States	EQI	Egypt, Yemen	Lebanon, Egypt	Egypt
Latin America and Caribbean	IPES/ACEPESA and WASTE (Research Project)	Peru, Bolivia, Colombia, Guatemala, Costa Rica, El Salvador	Colombia, Brazil, Guatemala, Peru, El Salvador	Brazil, Peru
Africa	IAGU	Ghana, Senegal	Kenya	South Africa
Asia-Pacific	UNCRD	India, Bangladesh	Thailand, Philippines	India
Global / Evening Session	World Bank/SANDEC	Tanzania, Burkina Faso, Costa Rica, Bolivia, Peru, Ecuador	Costa Rica	Paris, Training in WEDC and IHS

Cases not heard during the plenary session were scheduled for the special evening session on Day 3 of the workshop. Among these was an interesting and illustrative presentation on waste management in Paris over the last eight centuries by Françoise Lieberherr of the Urban Development Section of SDC. The message was that there are no mysterious solutions to the problems of waste management. European cities have also had their share of difficulties in finding solutions to sustainable waste management approaches. It took the discovery of the germ theory by Pasteur to change the mentality and attitude towards wastes and its management in the city of Paris after many centuries of trials, citizen non-cooperation and sometimes rebellion.

Session 4: Working Group Meeting I: Issues and Constraints

Four working groups were established on a random basis to distil the core issues and constraints facing MSEs in MSWM. The session was facilitated by Ms. Sandra Cointreau-Levine who provided a set of indicative questions (BOX 3) on issues that came out of the various addresses and the case studies.

BOX 3:

Questions for Working Group Session I

- What are the key issues (i.e. needs, problems, and constraints) in achieving the following:
  - enabling MSEs in MSWM to obtain investment capital?
  - obtaining cost recovery for M-Es in MSWM to meet cash flow requirements?
  - obtaining public cooperation with services and cost recovery activities of M-Es in MSWM?
  - replicating pilot M-E systems of pre-collection (i.e., primary collection)?
  - replicating pilot M-E systems of recycling (i.e., secondary materials recovery and reuse)?
  - replicating pilot M-E systems of resource recovery (i.e., composting, vermicomposting)?
- How do we encourage worker occupational health and safety protection by M-Es?
- How do we avoid Subsistence M-Es?
- How do we avoid having the poor pay more for M-E service than others pay for mainstream service?
- How do we size and structure the zones for equitable/fair M-E service?
- How do we limit M-Es investment risk?

All groups discussed the same set of questions and exercised the prerogative to choose its moderator and presenter of the group's conclusions at the plenary.

Session 5: Trends in Information Exchange and Communication

Mr. Bill Sims of the Together Foundation based in New York, USA, gave a presentation on the changing trends in information technology and management and its linkages with communication and exchange of experiences. He emphasised the need for participants to exercise leadership in staying abreast with the trends in information management as we move into the 21st Century. He used the example of the Best Practices for Human Settlement Database prepared jointly by the UNCHS (Habitat) and the Together Foundation as an input into the Cities Summit in Istanbul (June 1996) to illustrate one of the ways in which the participants could share their rich and varied experiences with each other and promote continuous dialogue and communication.

The subject of the facilitation of a possible network - WASTENET - was introduced. Mr Sims indicated that the necessary software exists to support such a network but cautions against the proliferation of networks and the need therefore to facilitate communication between existing networks instead of setting up new ones. He also reminded participants of the need to take into consideration the necessity for standardisation and the use of a common language in networking as well as consider upfront the issue of sustainability of networks.

Session 6: Field Trip to Micro-Enterprises Projects in MSWM in Cairo

Under the auspices of EQI, The Association for the Protection of the Environment (APE) and the Zabaleen Association, participants spent the whole afternoon of Day 3 in Zabaleen community located at the periphery of Cairo. Participants saw first hand the occupational and environmental conditions of the Zabaleen community, the transportation of waste into the community of about 7,000 families, the distribution of the waste within the community, the various recycling activities, re-use of waste as animal feed and re-use in small scale industrial production as well as the composting plant.

Participants were conducted through the community by an offspring of the waste recycling community who also gave a snap shot of close to fifteen years evolutionary experiences of the Zabaleen community. Various projects established by APE together with the Zabaleen community were also visited. These included a centre for skill development in paper and textile recycling into household products. The strong desire to survive against all odd and difficult occupational and environmental circumstances left its mark on the minds of many of the participants.

Session 7: Working Group Meeting II: Finding Solutions

"Waste picking or recycling should not be seen as the trade of last resort but should be seen as the beginning of entrepreneurship".....Mounir Neamatalla, EQI-UMP Arab States

The second working group session focused on recommending solutions to the issues and constraints identified during the first working session. The session adopted the same format and used the same groupings as in the first working group session. Ms. Sandra Cointreau-Levine facilitated the session and provided the set of questions for discussions by each of the working groups. The format for presentation of the recommendations was also suggested.

BOX 4:

Questions for Working Group Session II

- Outline changes in local bye-laws and national policy and legislation which could legitimise and support MSEs to work in MSWM.
- Recommend ways to help MSEs to obtain finance for capital investment and to meet cash flow requirements for MSWM.
- Which type of service agreement do you recommend for MSE collection of MSW — contracts (where the community or government pays) or franchises (where the users pay directly).
- Recommend ways to help MSEs in MSW collection to obtain public cooperation with cost recovery.
- What controls, if any, are needed to protect households receiving MSE collection services from excessive pricing?
- What actions could develop market demand for recyclables and limit price fluctuations from off-shore dumping of recyclables?
- What measures could protect MSEs from political intervention with the service agreement, including arbitrary loss of contractual commitment?
- Outline technical assistance and training needed by MSEs for MSW collection and for MSW recycling.
- Recommend steps for scaling up MSE pilot programmes to provide service throughout the city.
- How can information exchange on MSEs in MSWM be improved?
- Grab Bag Question: What do you think is important to MSE successful implementation, that hasn't been addressed in the above questions?

Session 8: Workshop Conclusions

"When you wash your face in the morning, you are not cooperating with yourself but meeting a basic responsibility to yourself. The same philosophy should apply to waste and environmental management".....Jorge Arroyo, PROMICRO, Costa Rica

Based on the conclusions and the discussions of the various working group reports, the moderation team elected Ms. Sandra Cointreau-Levine and Carl Bartone to put together the draft conclusions of the workshop. This came out in the form of a draft **Cairo Declaration of Principles for Micro and Small Enterprises Involvement in MSWM Service Delivery**. The declaration was discussed in plenary, and the suggested changes, additions and clarification sought by participants were incorporated into the final declaration (section 3.2).

Session 9: Press Briefings/ Launching of the Conceptual Framework for MSWM

A press release on the workshop as well as a one-page summary of the Conceptual Framework for MSWM in Low-income Countries (UMP Working Paper No. 9) were made available to the press corps in Cairo. Five journalists from the main newspaper houses in Egypt attended the closing session and had the opportunity to interview selected participants on various aspects of the workshop and case studies that were presented.

Session 10: Round Table Meeting of Collaborative Group on MSWM

The day after the Cairo workshop was devoted to the work of the Collaborative Group. The Group consists, presently, of an informal network of key multilateral (UNCHS (Habitat), World Bank, WHO (Nancy Office); bilateral agencies, (SDC, GTZ); the coordination team (global and regional) of the Urban Management Programme; International Foundations, Training and Research Groups (SKAT, SANDEC, WASTE Advisors, IAGU and the Institute for Housing and Urban Development); and selected professionals in Municipal Solid Waste Management. The Group's operations are informal in nature and open to the participation of additional partners.

The objective of the group is to ensure exchange of information on activities and experiences between the UMP and its partners on key MSWM issues and provide the opportunity for common actions to improve sector performance and learning on sustainable MSWM. The first meeting of the group was held in Ittingen, Switzerland, in April 1995. The meeting received a progress report from Jürg Christen of SKAT on the action plan of the first meeting and provided the opportunity from member institutions to update colleagues on status of both old and new initiatives in MSWM. Bill Sims of Together Foundation, supported by Ato Brown of SKAT briefed the Group on options and requirements for ensuring continuous information exchange both at the regional as well as the global levels. Due to time limitation the meeting could not conclude the action plan for 1997. A suggestion was endorsed to conclude outstanding business through an electronic Conferencing format with Carl Bartone of the World Bank as the moderator. The key conclusions of the meeting are presented under section 3.3.

2.2 Results of Working Groups: Major Discussion Points

Working Group I: Issues and Constraints

The full reports of the four working groups are attached as Annex 6. The core areas of concern issues as well as complementary issues identified by the working groups are summarised as follow:

Core issues

- access of MSEs to investment capital
- public cooperation with service delivery
- cost recovery
- replication - ways and means of moving from piloting activities to city wide coverage

Complementary issues:

- data on costs and profitability
- legal arrangement - recognition of MSEs
- supporting role of municipalities and national government
- gender sensitivity in countries where the issue is important
- final disposal
- interface between micro, small and macro enterprises
- occupational health and social support systems for waste pickers and recyclers
- linkages with the environment

Working Group II: Recommended Solutions

The full reports of the four working groups are attached as Annex 7. All working groups provided detailed options and solutions to most of the key issues identified above. These include institutional and organisational recommendations, financial and financing options and suggestions for promoting a legal framework as well as public cooperation in support of MSE activities in MSWM. The heart of the recommendations is the need for recognition and support for the contribution of MSEs in MSWM. The summary of the working group reports and the ensuing discussions by participants is captured in the Cairo Declaration of Principles for MSEs Involvement in MSWM Service Delivery (section 3.2).

3. Key Workshop Conclusions

3.1 Workshop Outputs

Specific recommendations on ways of enhancing the participation of small and micro-enterprises were suggested by participants. The recommendations also covered ingredients for design of MSE involvement activities in MSWM targeted at sector practitioners.

BOX 5:

Outputs of Workshop

- facilitation of a network of expertise and collection of regional experiences on MSEs involvement in MSWM
- opportunities for the transfer of inter-regional initiatives, best practices and lessons
- presentation of regional overviews and detailed country case studies covering MSEs involvement in collection, recycling and reuse in both formal and informal arrangements
- launching of the Conceptual Framework for MSWM in Low-income Countries Working Paper - UMP Working Paper No. 9
- formulation of the Cairo Declaration of Principles for Small and Micro-enterprises Involvement in MSWM Service Delivery
- a final report covering proceedings of the workshop (target date January 1997)
- an agenda to prepare a toolkit for municipal managers and local governments on how to involve MSEs in MSWM.

3.2 The Cairo Declaration of Principles for MSEs Involvement in MSWM Service Delivery

The Cairo Declaration was adopted by participants as the summary of conclusions for the workshop. It captures the principles or building blocks for the recognition of the contribution of MSEs in MSWM as well as providing the ingredients for structurally integrating the activities of MSEs into urban development and governance. The principles recognise that they are some fundamental constraints to the work of MSEs in MSWM. Among these are the issues of legal recognition, barriers to capital finance and cost recovery, capacity building in technical skills, citizens' responsibility and cooperation to service delivery, opportunity for expanding their activities in MSWM and urban environment domain. The Declaration further endorses the contribution of MSEs in meeting the shortfall in service coverage in urban areas especially in the peri-urban and low income areas. MSEs can also make a positive contribution to upgrading the status and working conditions of waste pickers and in the process support employment generation, poverty alleviation and contribute to a healthy and sustainable environment.

The Declaration further points out that the best way of sustaining the activities of MSEs is for municipalities and national governments to recognise and integrate MSE activities into the overall urban planning and management process. Access to capital finance, the institution of transparent and fair contractual arrangements between municipalities and MSEs, support in capacity building in technical skills, service demand generation through increased citizen responsibility and public cooperation as well as the creation of the enabling environment - appropriate institutional and legal arrangements - for scaling-up of MSE activities in waste and urban management will be important to consolidate the contribution of MSEs and transform their involvement into a sustainable development instrument.

The call to sector practitioners - external support agencies, NGOs, local and national governments, and sector specialists - to begin the process of recognition of the contribution of MSEs was explicitly endorsed by the Declaration. The first step as suggested by the workshop was for sector professional to avoid characterising MSEs activities with demeaning names as "scavenging" but to put into operational use dignifying and value-based names such as "waster pickers" or "recyclers".

Cairo Declaration of Principles

Micro and small Enterprises Involvement in Municipal Solid Waste Management Service Delivery

Background

⇒ Micro and Small Enterprises (MSEs) could effectively contribute to resolving the shortage in solid waste service delivery particularly, to low-income urban areas where community relations are important, and where direct user charges may be needed. They can also facilitate the upgrading the status, earnings and working conditions for waste pickers and recyclers and support employment generation and poverty alleviation.

⇒ For MSEs contribution to be effective, the following constraints need to be addressed: legitimisation and contractual commitments; capital finance and cost recovery; capacity building in technical skills; citizen responsibility and public cooperation; and the enabling environment for scaling-up operations.

⇒ To achieve lasting results MSE activities in MSWM should be integrated into the overall urban development planning and management process.

Legitimisation of MSEs and Contractual Commitments

⇒ Municipal recognition of the potential role for MSEs in MSWM is key. This can be achieved through: amendment of Bye-Laws to define the role of MSEs; structuring competitive procurements which facilitate entry of MSEs, including zone sizing for MSE economies-of-scale; interface MSE service with overall city-wide MSWM; and provide equitable access to adequate urban infrastructure

⇒ National recognition of the roles of MSEs in implementing national policy MSWM policy should be reflected in: environmental protection laws; privatisation laws to include MSEs; decentralisation policies; levelling of the playing field with off-shore dumpers of waste materials; and government procurement specification.

⇒ Contractual commitments should be fair and transparent. Steps should be taken to provide clear contractual performance specifications and sanctions, as well as independent auditing and possible NGO monitoring; provide fair rate adjustments and arbitration procedures with service agreements as well as provision of multi-year service agreements which match depreciation periods.

Finance and Cost Recovery

⇒ Strengthen micro-finance institutions through donor guarantee funds and capitalisation and/or capitalisation through domestic savings

⇒ Open eligibility criteria for MSWM and other environmental services

⇒ Seek alternatives to collateral or develop support system that make collateral redundant

⇒ Consider tax instruments which encourage investment in MSWM, such as: accelerated depreciation; customs duties reduction on specialised MSWM equipment and other measures to level the playing field with imported recyclables

⇒ Recognise the role of donations and volunteer efforts as support to MSEs but focused on: MSE start-up capacity building and entrepreneurial skills; networking with customers for recyclables and transitional networking for expanded services in other neighbourhoods

⇒ User charges should cover total costs to enable renewal and cross-subsidies should address ability to pay

⇒ Seek locally robust cost recovery mechanisms, such as: property taxes; attachment to charges for other services; and direct user charges

⇒ Structure MSE service agreement and profitability to assure effective and reliable service

⇒ Recognise the value of customer-service provider relationship

⇒ Establish segregated MSWM accounts for transparency of cost information and to limit political intervention

⇒ Match service delivery targets to service demand and willingness-to-pay

⇒ Municipalities can enhance cost recovery for MSEs by: performance monitoring of contractual services; public awareness campaigns; ensuring transparent cost accountability; and enforcement of Bye-Laws

Capacity Building in Technical Skills

⇒ Respond to MSE training needs in strengthening human dignity and self-respect in MSWM works; technical design and operations; financial management; occupational health and safety; and customer relations

⇒ Encourage information exchange and association among MSEs in MSWM

⇒ Provide for technical assistance to municipalities on MSE contracting and supervision in programmes

Citizen Responsibility and Public Cooperation

⇒ Promote source segregation of recyclables and hazardous wastes

⇒ Awareness campaigns on public roles to meet service requirements as well as on service costs and cost recovery requirements

⇒ General hygiene and environmental education to stimulate demand for services and better MSE working conditions

⇒ Awareness campaigns to emphasise social creativity, economic contribution and human dignity of MSEs in MSWM

Scaling-up MSEs Participation

⇒ Integrate MSE activities in strategic MSWM planning at city-wide level and strengthen municipal capacity to respond to MSE scale-up needs

⇒ Ensure reliable technical and institutional interface of primary and secondary collection through to final disposal

⇒ Involve NGOs in MSEs transition from project supported operations to independent operations.

⇒ Promote information exchange on MSE best practices

3.3 Key Conclusions of the Collaborative Group Meeting - Plan of Action

No.	Item	Lead Agency/ Partner(s)	Target date
1.	**Concept paper on Networking and Information Exchange on MSWM** SKAT was asked to prepare a concept paper for consultation on how the group can facilitate better information exchange and networking among its partners and more importantly among institutions and sector professionals in the UMP region. The advice of Together Foundation will be sought in the preparation of the concept paper.	SKAT/ *Together Foundation*	Beginning of Jan. 97
2.	**Electronic Conferencing among Collaborative Group** To finalise the next steps and action plan of the collaborative group, Carl Bartone of the World Bank-Urban Development Division will moderate an electronic Conferencing forum among the members of the group in order to consolidate opinions of members.	TWURD (World Bank)/ All Collaborators	Beginning of Jan. 97
3.	**Probable Topic for Next Global Meeting** The topic "Challenges of Waste Disposal in Developing Countries" was suggested as a compromise subject for the next global meeting of the Collaborative Group. The content will cover; linkages to the environment, waste minimisation along all stages of the waste chain, sustainable composting, and landfill planning and management. The meeting will also devote time to discussing strategies for dealing with the NIMBY phenomenon. The location for the workshop will be in the LAC region. Candidate countries include; Brazil, Colombia, Mexico and Chile. CEPIS will be a likely collaborator. The meeting will also be an excellent occasion to launch the "Decision Makers' Guide for Landfill Planning and Management in Low-income Countries" currently under preparation by WHO/SKAT.	SKAT/All Collaborators	Oct. 97
4.	**General** It was further suggested that a whole day should be reserved for the Collaborative Group meeting during the next global thematic meeting.	All Collaborators	-

Annexes

Annex 1: List of Participants and Organisational Profile

No.	Name/Adress	Personal/Organisational Profile
1.	**ABDEL AZIZ, Ahmed** Alexandria Business Association 52 Horreya Avenue Alexandria, Egypt phone: +203 482 5518 fax: +203 482 9576	Manager of the Alexandria Business Association. The organisation is involved in a major micro-credit and entrepreneurial development programme in the Alexandria area of Egypt.
2.	**ACKERMANN, Lisane** Carl Duisberg Gesellschaft e.V. Lützowufer 6-9 10785 Berlin, Germany phone: +49 30 25482 108 fax: +49 30 25482 218 e-mail: cdg@cdg.k.shuttle.de	Staff member of Carl Duisberg Gesellschaft, a non profit organization dedicated to international training, exchange and development. She works in the Section for Protection of the Environment and Natural Resources, with specialisation in Environmental Management in the industry. She is dealing specially with two training programmes: 1. Treatment and disposal of hazardous industrial waste. This programme contributes to acquire knowledge concerning avoidance, recycling, treatment or appropriate disposal of hazardous industrial waste. 2. Urban industrial environmental protection.
3.	**AKABAOUI, Ahmed (Dr.)** EQI-Consultant (Workshop Moderator) 9 Mohy El Deen Abu Elezz St. Mohandessin, Giza Cairo, Egypt phone: +202 360 2413 fax: +202 351 6070	He has extensive experience in training and group moderation. Areas of moderation in the past have included medical education, management, leadership, communication skills, environmental law, etc. In facilitating these workshops, he draws on his long and distinguished career in the field of psychiatry. He is currently a professor and chairman of the Department of Psychiatry at the University of Cairo.
4.	**AL NABHAN, Mai** Environmental Quality International (Arab States) 3B, Bahgat Ali St., 7th floor Cairo, Egypt phone: +202 341 7879 fax: +202 341 3331 e-mail: eqi@powermail.intouch.com	Architect/Heritage Protection Expert at EQI currently based in Syria. Until mid-1996 she was engaged by UMP (Arab States Support Offices) as the advisor to the seven participating countries involved in initiating and developing activities focused on the protection of historic sites and regeneration of rich architectural and cultural heritage as well as the promotion of sustainable development.
5.	**ANNOH, Collins Kodjo** Colan Consult Box C1513, Cantonments Accra, Ghana phone: +233 21 233 913 fax: +233 21 233 913	Managing partner of Colan Consult, a water supply, environmental management and infrastructure planning consulting firm based in Accra, Ghana. He combines both public services with a number of years in private sector operations and international development work. Previous engagements include working as Country Coordinator, UNDP/World Bank WSS Programme, Project Manager, Community based Sanitation Project, Ghana and Project Engineer, Accra Waste Management Project.

No.	Name/Adress	Personal/Organisational Profile
6.	**ARANDEL, Christian** Environmental Quality International (Arab States) 3B, Bahgat Ali St., 7th floor Cairo, Egypt phone: +202 341 7879 fax: +202 341 3331 e-mail: eqi@powermail.intouch.com	In his capacity as Programme Advisor at Environmental Quality International, he manages the Urban Management Programme in the Arab States and provides substantive input in the areas of governance and poverty alleviation. His training is in urban planning and public administration with a focus on international development. Most of his experience is in North America and in the Middle East and North Africa. He is currently conducting research on the contribution of the informal sector to the provision of land and housing for the poor in Egypt.
7.	**ARROYO, Jorge** ILO - Proyecto PROMICRO Centro Comercial Cocori, II-piso Los Yoses San José, Costa Rica phone: +506 253 7667 fax: +506 283 4851	Founder, former executive director and now president of the Peruvian Institute for the Development of the Social Economy (IPES). Currently, expert in the organisation "Innovation of Micro-enterprise Development Projects in Central America" - PROMICRO - of the International Labour Organisation based in Costa Rica. PROMICRO supports micro-enterprises, provides assistance to government programmes supporting micro-enterprises, and supports the development of innovative and experimental projects directed at improving the conditions of micro-enterprises. PROMICRO is active in the solid waste management area with field projects in Honduras and Costa Rica.
8.	**ASSAD, Marie** Association for the Protection of the Environment (APE) H, 1095 Corniche El Nile Garden City 1145 Cairo, Egypt phone: +202 354 3305 fax: +202 355 3896	A sociologist/anthropologist with extensive experience in issues related to family health and in particular the health and well-being of women. She has served as a consultant on numerous urban and rural upgrading projects in the fields of water supply, sanitation, solid waste management, family planning, and reproductive health. She has conducted extensive work within the Zabbaleen community, contributing to the health component of the Zabbaleen Environmental and Development Programme and the Garbage Separation at Source Project funded by the Ford Foundation. She also has extensive experience in training.
9.	**BADIANE, Alioune** UMP/UNDP 01 BP 1747 Abidjan 01, Côte d'Ivoire phone: +225 44 2364 fax: +225 44 3976 e-mail: badiane@africaonline.co.ci	A city planner by profession and currently the regional coordinator of the Urban Management Programme - Africa region. His office provides technical assistance and information on best practices to cities throughout sub-Saharan Africa. His personal strengths are in the area of institutional management, physical planning - including sanitary landfill siting and the promotion of informal sector participation in development processes.
10.	**BARTONE, Carl (Dr.)** World Bank 1818 H Street NW Washington, DC 20433, USA phone: +1 202 473 1301 fax: +1 202 522 3232 e-mail: cbartone@worldbank.org	Principal Environmental Engineer in the Transport, Water and Urban Department of the World Bank and specialised in urban waste management and pollution control issues. He has 25 years of experience in the international field and has published extensively in the fields of waste water and solid waste management. Prior to joining the World Bank, he was regional pollution control advisor and research director with the Pan American Centre for Environmental Engineering and Sciences (CEPIS/PAHO) in Lima, Peru. He currently coordinated a programme of urban environment management activities within the World Bank and with other partners.

No.	Name/Adress	Personal/Organisational Profile
11.	**BICZKOWSKI, Martina (Dr.)** CES Consulting Engineers Salzgitter GmbH Nord-Süd-Str. 1 Postfach 51 16 80 38246 Salzgitter (Bad), Germany phone: +49 53 41 823 479 fax: +49 53 41 823 199	CES has been working in many countries in the field of environmental protection for over 30 years. She has been working in the field of waste management in Germany for three years and additionally performed a pre-feasibility study in Ayacucho (Peru). Is doing at present a waste management study for the Diuriya District of the City of Alexandria.
12.	**BROWN, Ato** SKAT, Swiss Centre for Development Cooperation in Technology and Management Vadianstrasse 42 9000 St.Gallen, Switzerland phone: +41 71 228 54 54 fax: +41 71 228 54 55 e-mail: 100270.2647@ compuserve.com	Infrastructure planning and management specialist by training with about ten (10) years working experience with the World Bank and on UNDP/UNICEF projects. His main engagements have been in the areas of sanitation, solid waste management, urban planning and water supply programmes in Africa and Asia. His strengths are in strategic planning, networking and institutional diagnosis and reforms, private sector participation in municipal and rural services, community management and innovative financing of services delivery in water supply and waste management. He is currently based in SKAT - Swiss Centre for Development Cooperation in Technology and Management as sanitation and waste management specialist in the Urban Development Department.
13.	**BUKHARI, Amir** Damascus Governorate Ministry of Housing and Utilities Cleanliness Department phone: +963 11 221 6240 fax: +963 11 221 7570	Manager of Cleanliness Department in Damascus Governorate and Member of Environmental Committee in Engineering at the Damascus Municipality.
14.	**CARCELLAR, Norberto, CM (Fr.)** Vincentian Missionaries Soc. Dev. Foundation Inc. (VMSDFI) Po Box 1179 Quezon City, Metro Manila Philippines phone: +632 924 4550 fax: +632 924 4549	*Executive Director of the Vincentian Missionaries Social Development* Foundation, the main implementor of the Payatas Environmental Development Programme. Based in the Payatas community for six years, the Foundation promotes waste recycling technologies which put primacy on the skills, acumen, and well-being of the waste pickers. Such promotion takes place within a total community development framework which includes such components as micro-enterprise promotion with savings and loans facilities, business training, product and market development and research, including shelter-related programme with land, housing, health, and education support.
15.	**CARIMO, Daude** Municipal Council of Maputo Praça da Independencia Maputo, Mozambique phone: +258 1 430 488 fax: +258 1 420 790	Director of the Urban Services. He manages the urban services of the Maputo city, a municipality of 2 million inhabitants including the collection and treatment of solid waste.
16.	**CHRISTEN, Jürg** SKAT, Swiss Centre for Development Cooperation in Technology and Management Vadianstrasse 42 9000 St.Gallen, Switzerland phone: +41 71 228 54 54 fax: +41 71 228 54 55 e-mail: 100270.2647@ compuserve.com	Head of the Urban Development Department of SKAT. Professional background in civil and environmental engineering with around 15 years of working experience with the private sector and in SDC/ Helvetas programmes engaged as project manager and programme director and consultant in transportation, water supply, sanitation, urban and rural health infrastructure services, municipal and health care waste management and small enterprise involvement in shelter projects in Nepal, Bhutan, Lesotho, Cameroon, Kenya, Tanzania and Uganda. His strengths are in the areas of project appraisal and development, strategic planning, management, monitoring and evaluation.

No.	Name/Adress	Personal/Organisational Profile
17.	**CISSE, Oumar** Urban Community of Dakar Department of Environment PO Box 186 Dakar, Senegal phone: +221 213 174 fax: +221 214 313	He is a civil engineer and graduate in environment. Has been working on solid waste management, drainage and sanitation in the Urban Community of Dakar. The Urban Community of Dakar is an association of five municipalities which represent 25% of the Senegalese population. He heads the Department of Environment in the Urban Community of Dakar which is responsible of planning and managing waste collection, transport and disposal in the city of Dakar.
18.	**COAD, Adrian (Dr.)** GTZ German Technical Cooperation PO Box 32409 Jerusalem 91323, Israel phone: +972 2 749 059 fax: +972 2 749 059	German Agency for Technical Cooperation - GTZ advisor to the Environmental Planning Directorate of the Palestinian Authority responsible for environmental issues in the Gaza Strip and the West Bank. Within this body is the recently formed Solid and Hazardous Waste Department, which is charged with coordinating, assisting and monitoring solid waste management activities. Current focus is on staff training and improving disposal practices, but there is also interest in the promotion of private sector recycling and primary collection initiatives; there is great need for employment generation, but suitable approaches have not yet been defined.
19.	**COINTREAU-LEVINE, Sandra** 12 Church St. Roxbury CT 06783, USA phone: +1 860 350 5965 fax: +1 860 350 8512 e-mail: scointreau@aol.org	A civil/sanitary engineer with more than 25 years of experience in waste management systems analysis and planning. She has performed over 90 SWM planning assignments in more than 30 developing countries including: Jamaica, Colombia, Paraguay, Mexico, Romania, Yugoslavia, India, Pakistan, Thailand, Philippines, Korea, Viet Nam, Indonesia, Tunisia, Turkey, Jordan, Nigeria, Guinea, Ghana, Tanzania, and West Bank/Gaza. She has conducted a number of studies into opportunities for private sector investment and service participation in SWM.
20.	**DAVIES-COLE, Abimbola (Dr.)** Netwas International P.O. Box 15614 Nairobi, Kenya phone: +254 2 890 555 fax: +254 2 890 554 e-mail: netwas@ken.healthnet.org	He is Programme Officer for Technical Training. Netwas' goal is to improve the living conditions of the poor in Eastern Africa through capacity building of water and sanitation sector institutions, and the promotion of environmental management. As a result of the increased problem of solid waste management in the towns and cities of Africa, the organisation is developing a course on solid waste management. This course, which will start in 1997, is targeted at Municipal Authorities, NGOs, policy makers and other personnel interested in solid waste management.
21.	**DIOP, Ousseynou (Dr.)** IAGU BP 7263 Dakar, Senegal phone: +221 244424 fax: +221 250826 e-mail: iagu@idrc.ca	An environment and waste management specialist with extensive experience in the African region. He is the executive director of the African Institute of Urban Management based in Dakar, Senegal. His institute is dedicated to improving management capacity in the African region through targeted activities aimed at municipal manager and local government official. IAGU has a professional linkage and networks with other regional (RWSG-WA, CREPA, MDP, UMP-Africa, etc) and international (IHS) groups in the execution of its mandate. Most of the environmental planning and management initiatives within the African UMP programme is carried out through IAGU.
22.	**EL NIMR, Ahmed (Prof.)** GTZ-Aswan MSWM Project 9 Street 298, New Maadi Cairo, Egypt phone: +202 353 7954 fax: +202 353 9952	Prof. of Civil Engineering, Mansoura University in Egypt. He is currently involved as a consultant for the Egyptian-German Cooperation (GTZ) Project in MSWM in Aswan.

No.	Name/Adress	Personal/Organisational Profile
23.	**EL RIFAI, Dania** Makassed Philanthropic Association Verdun-Basmir El Kassar Street Tarazi Bld. Beirut, Lebanon phone: +961 1 867115 fax: +961 1 867115	She is Head of International Affairs Bureau and UMP Country Coordinator for Lebanon. Her involvement with the Makassed Association and in MSEs is very recent and relates to the necessity of Lebanese NGOs to undertake income generating projects in order to survive. Shift from relief and emergency activities to development projects is the major challenge for all Lebanese NGOs. Handling the country coordination for UMP in Lebanon, this has contributed greatly in exchanging expertise with other countries, mainly the Alexandria Business Association (support of MEs).
24.	**FERNANDEZ, Antonio L.** UN Centre for Regional Development 1-47-1 Nagono, Nakamura-Ku Na-Goya 450, Japan phone: +81 52 5619378 fax: +81 52 5619374 e-mail: afernand@uncrd.or.jp	Just recently appointed to handle the Training Promotion Office of UNCRD (based in Japan). Continues research activities on capacity building in urban environmental management of which a large portion is devoted to MSWM. Since 1987, the UNCRD has had a research project in SWM. UNCRD is a research and training centre and a project office of the UN to serve developing countries.
25.	**GIESECKE, Ricardo E.** 154 J.A. Rocq Santa Beatriz Lima 1, Peru phone: +511 433 0378 fax: +511 433 6750 e-mail: rgiesecke@unired.net.pe	He has over the last 15 year consistently developed a solid professional background in MSWM, specialising in the planning, implementation and strategic monitoring of micro-enterprises in MSWM in several GTZ projects across Latin America. His current appointment as a member of the metropolitan Lima councils gives him considerable strength in public administration and management and interface arrangements with the private sector.
26.	**GOHAR, Karim** ESDF Egyptian Swiss Development Fund 10 Abdul Khalik Tharwata Cairo, Egypt phone: +202 578 5047 fax: +202 578 5046	Executive Secretary of ESDF, he is interested in the formation of an Egyptian group concerned in MSWM.
27.	**GOMEZ UMANA, Alejandro** Fundación Social Calle 59 No. 10-60. p. 15 Calle 63 No. 13-12, p. 6 Bogotà, Colombia phone: +571 347 3867 fax: +571 212 5402 e-mail: rgomez@colomsat.net.co	He is the regional coordinator in Fundacion Social in charge of social communication studies. He holds a Masters degree in environmental development. Fundacion Social is an NGO which develops projects that affect the structures causing poverty.
28.	**GUENE, Ousseynou** CREPA 03 PO Box 7112 Ouagadougou, Burkina Faso phone: +226 310 359 fax: +226 310 361	Sanitary Engineer engaged with CREPA since 1989. CREPA is a member of the International Training Network in Water Supply and Waste Management. It is active in 14 francophone African countries. Since 1990, CREPA has initiated solid waste management projects in low-income urban areas in Burkina Faso, Benin, Mali, Cote d'Ivoire and Senegal. He was formerly the coordinator of a joint research project dealing with organic solid waste recycling in poor neighbourhoods in Abidjan, Bamako, and Cotounou. This project was initiated by IAGU, CREPA, ALTER EGO and EAWAG. His current focus is on community management in water and sanitation.

No.	Name/Adress	Personal/Organisational Profile
29.	**HUTAPAED, Komson** Media Center for Development 19/6 Aree 4 (North), Phamolyothin Road, Samsennai, Phayathai Bangleole 10400, Thailand phone: +662 279 0553 fax: +622 279 6727	Media Centre for Development is an NGO based in Bangleole, Thailand, active since 10 years in media and campaign for environment and sustainable development in rural and urban areas. One of the main activities is the Recycle Paper for Trees Project which is the project to campaign among the urban people, especially business sectors, to participate in paper waste solving issues and to motivate them to start recycling activity in order to solve urban waste problems and to save trees and natural resources. At the same time the project aims at raising funds through paper recycling activity.
30.	**HUYSAMN, Marijk (Dr.)** Institute for Housing and Urban Development Studies PO Box 1935 3000 Bx Rotterdam The Netherlands phone: +31 10 402 1523 fax: +31 10 404 5671 e-mail: m.huysman@ihs.nl	Staff member of the Institute for Housing and Urban Development Studies (IHS), an international educational institute located in Rotterdam, the Netherlands, and with offices in South-East Asia and Romania. The institute is organised around three professional disciplines - Urban management, Urban Environment Management and Housing. IHS carries out training, advisory technical services and research work in the Netherlands and abroad in Urban Environment Management (which include MSWM) as well as conducts several courses (Masters and short courses) every year for professionals from developing countries and the former East-European countries. Her main interests include; promotion of appropriate SWM through analysis and actor approach; life cycle analysis as policy making tool for local governments; attention to decentralisation and public-private partnerships, integration of alternative systems of recovery and recycling, the role of NGOs/CBOs and community participation in MSWM, and the collection of best practices in the field of MSWM.
31.	**KAMARA, James** UNEP P.O. Box 30552 Nairobi, Kenya phone: +254 2 624 288 fax: +254 2 623 928	Programme Officer in UNEP. UNEP has the mandate to inspire, inform and catalyse action on the environmental, the natural, sub-regional, regional and global levels.
32.	**KAMEL, Leila** Association for the Protection of the Environment (APE) P. O. Box 32, Qala'-Mokattam Cairo, Egypt phone: +202 510 2723 fax: +202 355 3896	Community development trainer with long-standing engagement with local governments in Egypt in the establishment, coordination, implementation and monitoring and evaluation of community education programmes. She has worked on numerous internationally funded projects in the fields of water supply, sanitation, and solid waste management. Her main areas of focus have been education, health care, income generation, and gender analysis. She uses participatory approaches in all her work and is excellent at mobilising community resources through work with NGOs, PVOs, and community development associations.
33.	**KÜNZI, Peter** Head of Industry, Vocational Training and Urban Development Division, SDC Eigerstrasse 73 3003 Bern, Switzerland phone: +41 31 322 3571 fax: +41 31 324 1693 e-mail: peter.kuenzi@sdc.admin.ch	Deputy Director of the Technical Division of SDC and Head of Industry, Vocational Education and Urban Development Department. He has over 20 years experience in the MSE field. His department is responsible for policy and strategy development, international networking and for operational support to SDC geographical units in Asia, Africa, Latin America and Eastern Europe. In 1994 SDC supported well over 200 bilateral programme/projects with disbursements of around USD 100 million in these three sectors.

No.	Name/Adress	Personal/Organisational Profile
34.	**LARDINOIS, Inge** WASTE Advisors on Urban Environment and Development Nieuwehaven 201 2801 AN Gouda, the Netherlands phone: +31 182 522625 fax: +31 182 550313 e-mail: lardinois@waste.nl	Environmental Specialist at WASTE with a special focus on technical and social (including gender) issues. Her previous experience in the field covers work in Brazil, Guinea Bissau, Zimbabwe and Mozambique. She joined WASTE in 1992 and has since then been focusing on analysing consultant reports on waste recycling and writing articles and co-authored books on this subject. Her current engagement in the Urban Waste Expertise Programme financed by DGIS, is coordinating research activities on innovative waste collection enterprises, plastic recycling and composting, particularly in the Latin American region. Her special interests are in occupational and public health, environmental pollution and the integration of micro-enterprise and the informal sector in municipal waste management.
35.	**LANDIN, Carlos (Dr.)** UMP/LAC Casilla 17-17-1449 Quito, Ecuador phone: +593 2 446 322 fax: +593 2 446 326 e-mail: oikos@oikos.org.ec	Consultant Engineer in environmental aspects of public services. He is also advisor of UMP/LAC in urban environment and Manager of Environment for the Municipal Enterprise of Water and Sanitation in Quito (EMAAPQ). Until mid-1996 he was engaged by UMP-LAC as an environmental specialist for the region.
36.	**LIEBERHERR, Françoise (Dr.)** Head of the Urban Development Section, SDC Eigerstrasse 73 3003 Bern, Switzerland phone: +41 31 322 3344 fax: +41 31 324 8741 e-mail: francoise.lieberherr@deza.admin.ch	Head of Urban Development section of SDC in Berne. This section is part of the Industry, Vocational Education and Urban Development Services Department of SDC. The section is currently involved in the promotion of solid waste management within the context of an integrated global and multidisciplinary approach to sustainable urban environmental management. Main interests include community development, empowerment, decentralisation and the promotion of appropriate solid waste management.
37.	**LITTLE, John** UMP/UNCHS P.O. Box 30030 Nairobi, Kenya phone: +254 2 623 204 fax: +254 2 624 264	Urban planner and human settlement advisor on the infrastructure component of the Urban Management Programme. He is based in the headquarters at UNCHS (Habitat) in Nairobi and provides global support to the regional offices of the programme. In the last 8 years he has been involved in UNCHS municipal development and management projects in Bangladesh and Nepal and commands a lot of experience in indirect representation of the view points and needs of municipal elected officials and managers in developing countries.
38.	**LYSE, Ole** UNCHS (HABITAT) P.O. Box 30030 Nairobi, Kenya phone: +254 2 623 565 fax: +254 2 624 264 e-mail: ole.lyse@unep.no	Urban Environmental Management Advisor. Civil Engineer with experience in community based development programmes, and as municipal engineer in developing countries (Africa). Currently with UNCHS (HABITAT), Nairobi, as senior member of UMP (environment), and core team member of the Sustainable Cities Programme, focusing on new approach to city planning and management through the interface development/environment concerns.

No.	Name/Adress	Personal/Organisational Profile
39.	**MAGOMA, Fablan** Sustainable Dar es Salaam Project P.O. Box 72081 Dar es Salaam, Tanzania phone: +255 51 113 659 fax: +255 51 114 014 e-mail: fo.tza@undp.org	Official of the Ministry of Health in Tanzania and ex-coordinator of the Sustainable Dar es Salaam Project (SDP). He commands expertise in public health, solid waste management, environmental sanitation, adult education, and has considerable experience in operating at the municipal level. The SDP is part of the global Sustainable Cities Programme, a joint programme of UNCHS (Habitat) and UNEP. The programme provides municipal authorities and their partners in the public, private and community sectors with an improved environmental planning and management capacity. Demonstration projects are currently on-going in 15 cities world-wide and these should result in the formulation of a local Agenda 21 which includes environmental management strategies, action plans and priority technical cooperation and capital investment projects for the cities concerned.
40.	**MEJIA, Gaston** Centre for Integrated Urban Services (PROA) Calle 2, No. 7, El Alto La Paz, Bolivia phone: +591 2 821 739 fax: +591 2 821 552 e-mail: rau.@proa.rds.org.bo	Director of the Centro de Servicios Integrados para el Desarrollo Urbano (PROA), a non profit technical and financial services association working in the cities of El Alto, La Paz y Santa Cruz, Bolivia, since 1987. PROA, among its main interests include solid waste management, area in which works supporting community, public and private partnerships, carrying on community organisation solid waste recycling training programme, promoting local capacity building and dissemination of appropiate solid waste management techniques through tailored courses, and offering financial assistance to small solid waste collection and disposal services private enterprises.
41.	**MWIHAVA, Ngosi** Sustainable Dar es Salaam Project P.O. Box 7725 Dar es Salaam, Tanzania phone: +255 51 27878 fax: +255 51 114 014 e-mail: magnus.mentelius@undp.org	Currently the coordinator solid waste management on the Sustainable Dar es Salaam Project (SDP) in Tanzania. With a background in mechanical and environmental engineering, he coordinates all aspects of planning and project development on the solid waste component of the SDP which involves private sector and micro-enterprises involvement in MSWM. The SDP was launched in 1992 but became fully operational in 1993. The overall aim of the SDP is to strengthen the capacity of the Dar es Salaam City Council to plan and manage the growth and development of the city in partnership with other public sector parties, the private sector and popular sector interested groups on a sustainable basis.
42.	**NASIR, Sari Jamil (Prof.)** University of Jordan Amman, Jordan phone: +962 6 641 977 fax: +962 6 641 977	Professor of Sociology and Chairman of the Social Community Centre, an NGO in several regions of Jordan.

No.	Name/Adress	Personal/Organisational Profile
43.	**NEAMATALLA, Mounir (Dr.)** Environmental Quality International/UMP (Arab States) 3B, Bahgat Ali St., 7th floor Cairo, Egypt phone: +202 341 7879 fax: +202 341 3331 e-mail: eqi@powermail.intouch.com	President of EQI. He has over 19 years of experience in the management of development projects in Egypt and the Middle East. He has served as a senior consultant to the World Bank, the Ford Foundation, the United Nations, and to numerous governmental agencies and private organizations, both locally and internationally. Mr. Neamatalla has directed major institutional development, environmental management, and urban service delivery projects in Egypt and the Middle East. Over the past decade, he has been actively engaged in the formulation and the implementation of urban development, enterprise promotion and poverty alleviation initiatives. As President of EQI, he provides overall guidance in the preparation, financing, and implementation of a number of infrastructure, industrial, and tourism development projects, servicing both government and the private sectors. His experience with the informal sector has made him an active promoter of private initiative, firmly believing in the importance of capitalising on local resources to realise the full potential of development programme.
44.	**PFAMMATTER, Roger** EAWAG/SANDEC Überlandstrasse 133 8600 Dübendorf, Switzerland phone: +41 1 823 5423 fax: +41 1 823 5399 e-mail: pfammatter@eawag.ch	Environmental Engineer, Project Officer for Solid Waste Management at SANDEC - "Water and Sanitation in Developing Countries", located within the Swiss Federal Institute for Environmental Science and Technology (EAWAG) in Dübendorf, Switzerland. (formerly IRCWD). SANDEC is a research and teaching institution focusing on problems of water supply, sanitation and solid waste management in Africa, Asia and Latin America. Current or recent projects in MSWM include a review of practical experiences of non-governmental refuse collection schemes in low-income urban areas.
45.	**PRICE, Jorge L.** IPES, Institute for the Development of the Social Economy Av. Javier Prado Este 1530 Lima 27, Peru phone: +511 475 7173 fax: +511 475 0368 e-mail: posmast@ipes.org.pe	Executive Director of the Institute for the Development of the Social Economy (IPES), a non profit association working in Latin America since 1983. IPES has an interesting experience with the privatisation of public services through the promotion of microenterprises. From its experience in Peru with microenterprises dedicated to solid waste management, it developed a methodology that is now being replicated in other countries, in some cases directly by IPES and in others by other organizations counting with their support. In this aspect, their work includes the promotion of microenterprises, training and technical support, assessment of solid waste management in a specific region, etc.
46.	**RAMKUMAR, T. K** EXNORA International 42, Pelathope, Mylapore Madras 600 004, India phone: +91 44 493 3527 fax: +91 44 434 7376 e-mail: exnora@giasmd01.vsnl.net.in	A practising advocate, at present is President of Exnora International, a non governmental organisation, based in India, whose main objective has been to develop civic and environmental consciousness among the public. Past and current activities include establishment of community based Solid Waste collection, composting, recycling and disposal facilities through promotion of public awareness on the importance of safe handling and disposal of Solid Waste. He was responsible for creating legal framework and structure for the organisation, besides coordinating projects such as Citizens' Waterways Monitoring Programme (WAMP), propagating vermicomposting as an effective means of disposal of biodegradable waste, promotion of environmental awareness among students (Students Exnora Programme) and Sustainable Madras Urban Project.

No.	Name/Adress	Personal/Organisational Profile
47.	**RASHID, Harcon** UNDP/World Bank Water and Sanitation Programme 6 PO 97 Dhaka, Bangladesh phone: +880 2 865241 fax: +880 2 865351 e-mail: hrashid@worldbank.org	Urban planner-architect with experience in water and sanitation service planning, project formulation, supervision and implementation. Has been working with the UNDP-World Bank Water and Sanitation Programme for the last 10 years. Professional interest includes urban infrastructure and services development, housing, urban planning and urban design.
48.	**RIVAS, Francisco** Asociación Centro Ejecutor de Projectos Economicos y de Salud (ACEPESA) Apartado 1257-1002 San José, Costa Rica phone: +506 225 84 48 fax: +506 225 84 48 e-mail: acepesa@sol.racsa.co.cr	Executive Director of ACEPESA - Association «Centro Ejecutor de Proyectos Economicos y de Salud» ACEPESA, a non-governmental organization, founded in 1990 by a group of professionals. The main objective of ACEPESA is to create development alternatives in three lines of programs: 1. Small Scaled tourism industry (Touristic Micro enterprises) 2. Environmental Sanitation Program (Micro enterprises in solid waste management) 3. Labour Health Center. The Executive Board of ACEPESA is responsible for the coordination of the programs and the definition of the politics and strategies. The International Cooperation Unit is responsible for the public relations at a national and international level. ACEPESA receives support from many international cooperation institutions.
49.	**ROBERTS, Debra (Dr.)** Durban Metropolitan Council P. O. Box 680 Durban 4000 South Africa phone: +27 31 3002527 fax: +27 31 3002225	Manager of the Environmental Branch of the Central Local Council of Durban in South Africa. As a result of recent institutional changes following the first democratic local elections in Durban, the Environmental Branch is also responsible for environmental management throughout the Durban Metropolitan Area (as of 1996-07-01). She oversees the Local Agenda 21 programme which is aimed at environmental policy and action plan development based on the principles of sustainable development and community participartion. In the context of the city's Local Agenda 21 programme, the Environmental Branch liaises closely with the Water and Waste Service Unit which has responsibility at the metropolitan level for the management of the landfill sites and the collection of domestic waste. The Enviromental Branch and the Water and Waste Service Unit are cooperating on the Bester's Camp Clean and Green Project.
50.	**RUSHBROOK, Philip (Dr.)** World Health Organisation O.M.S 149 Rue Gabriel Péri 54500 Vandoeuvre-Nancy France phone: +33 3 831 58 770/74 fax: +33 3 831 58 773 e-mail: enc@who.dk	Solid waste specialist for WHO in the European region. Conducts solid waste project in the field, in cities in central and eastern Europe and the newly independent states of the former Soviet Union. Most projects are focussed on improving municipal waste collection at local authority or community level, as well as assistance on public health problems from health care, industrial and chemical wastes.
51.	**SAIFODINE, Farida** Ministry of Environmental Affairs Av. Acorda de Lusaka Maputo, Mozambique phone: +258 1 465 843 fax: +258 1 465 844	Biologist at the Ministry of Environmental Affairs involved in urban environmental management and responsible for solid waste management monitoring.

No.	Name/Adress	Personal/Organisational Profile
52.	**SCHÜBELER, Peter** Werkstatt für Architektur und Planung Olgastrasse 8 8001 Zürich, Switzerland phone: +41 1 2616233 fax: +41 1 2616231	Architect and planning consultant with a focus on urban development, infrastructure, community based development and urban management. His geographical focus is in Asia (notably Pakistan, Indonesia and Vietnam) where he supports the planning and supervision of a number of integrated urban development projects financed by SDC and other donors. He is also credit with the publication of two UMP working papers.
53.	**SCHWEIZER, Frank Helmut** Independent Consultant Kernerstrasse 32 70182 Stuttart, Germany phone: +49 711 244657 fax: +49 711 233177	Independent consultant in environment management, solid waste and wastewater management. Over 15 years experience in public service (environmental control) and consultancy practices in solid and liquid wastes in Ghana, Malaysia, Botswana, Kenya, India, Turkey and the Maldive Islands. He has special interests in environmental regulation, eco-planning, waste minimisation, composting, waste-to-energy and institutional strengthening of public authorities, NGOs and micro-entreprises.
54.	**SHARARA, Rania** Environmental Quality International/UMP (Arab States) 3B, Bahgat Ali St., 7th floor Cairo, Egypt phone: +202 341 7879 fax: +202 341 3331 e-mail: eqi@powermail.intouch.com	Social anthropologist working in the field of environment and development. She is a senoir researcher at EQI and handles desk and field research work in the areas of urban upgrading, income generation, rural health, heritage protection, and eco-tourism projects. She has extensive working experience on USAID funded projects. Through her on-going research work on the organisation of popular culture in Egypt, she has forged working relationships with officials at all levels of the Egyptian government.
55.	**SIMS, William** Together Foundation 55 East 75th Street New York NY 10021, USA phone: +1 212 628 1939 fax: +1 212 628 4265 e-mail: bill.sims@together.org	Executive Director of the Together Foundation based in New York. It is a private operating foundation committed to providing assistance to non-profit organisations, NGOs and UN Agencies with their computer, information, networking, database and communication needs. It also promotes and supports exploration issues linked to organisation and delivery of information, leadership training, and information technology and development. The foundation, in partnership with UNCHS (Habitat), developed the Best Practices Database for Human Settlements for the City Summit in Istanbul (June 96). The database includes around 400 case-studies solutions to urban problems, using standard criteria, categories and reporting format. The database has evolved into the Best Practices Initiative and Local Leadership Programme joining thematic centres and regional hubs from around the world in the collection, screening and dissemination of Best Practices for Human Settlements.
56.	**SUNBUL, Abdullah** Sana'a Municipality Solid Waste Department, P. O. 205 Sana'a, Yemen phone: +967 1 278 479 fax: +967 1 278 279	Former Director General of Sana'a Municipality and also of the Association Cooperative for Cleansing and Environmental Health. He is currently chairman of the Association for the Preservation of the Environment and an advisor to the mayor of Sana'a on solid waste and environmental issues. He has been involved over the last five years in the private contracting of solid waste collection in Yemen using micro-enterprises.

No.	Name/Adress	Personal/Organisational Profile
57.	**THOMAS, M. Jean** National Council of Negro Women (NCNW) Egypt PVO Development Project 53 Maniel St., 6th Floor Maniel El Rodu Cairo, Egypt phone: +202 363 4709 fax: +202 363 0072 e-mail: ncnw@ritsec1.com.eg	Director of the National Council of Negro Women. NCNW is an African-American women organisation with the principal goal of improving the quality of life of African women and their families. The organisation works in the areas of NGO capacity building, early childhood education, health, environment and economic development. NCNW implements the Egypt Private Voluntary Organisation Development Project which is funded by USAID.
58.	**TRIVELLI, Pablo O. (Dr.)** Trivelli y Asociados Casilla 323-V Correo 21 Santiago, Chile phone: +562 216 9884 fax: +562 235 9091 e-mail: ptrivelli@trivelli.cnt.cl	Until end of September 96, Regional Coordinator for Latin American and the Caribbean of the Urban Management Programme, located in Quito, Ecuador. Currently consultant on urban management issues. Over 20 years experience in working on urban development topics for government, public sector and private sector in the national and international field. From 1990 to 1992, advisor to the Mayor of Santiago, Chile, and project manager at the Municipality. Also member of the Advisory Committee to the Minister of Housing and Urban Development. In previous years full professor of the Institute of Urban Studies at the Catholic University of Chile, consultant for national private firms and also international agencies. Author of multiple articles in national and international periodicals, co-author of several books, mostly devoted to urban land, municipal finance, informal sector and urban poverty, and urban development policy.
59.	**VON EINSIEDEL, Nathaniel** Urban Management Programme (Asia-Pacific) 50770 PO Box 12224 Kuala Lumpur, Malaysia phone: +60 3 651 2934 fax: +60 3 651 2932 e-mail: umpasia@ump.po.my	Regional coordinator of the Urban Management Programme - Asia/Pacific region. The UMP programme is currently involved in regional research on best practices. As a regional coordination office, his office is heavily involved in strengthening of the capacity of local governments through networking and facilitation of regional workshops and seminars in all aspects of urban development and management. As the former commissioner for planning for the Greater Manila Commission for several years before his current appointment, his experience in urban development and management is extensive and multi-faceted.
60.	**WELLS, Christopher** Compromiso Empresarial Para Reciclagem (CEMPRE) Rua Alvarenga 1254 cj.52 04531-004-Sào Paulo - SP Brazil phone: +11 852 5200 Fax: +11 852 5264 e-mail: cempre@amcham.com.br	Executive Director of the Brazilian Recycling Commitment (CEMPRE), a non-profit association funded by 13 multinational and major Brazilian corporations to promote recycling and integrated waste management in Brazil. Responsible for CEMPRE's launching in 1992, he has coordinated the creation of two pioneer publications: an educational kit to help form recycling cooperatives of scavengers and Brazil's first manual on integrated solid waste management, which has just been translated into Spanish in Venezuela. CEMPRE's member companies believe they have an important role to play in stimulating recycling, and proper waste management, in the country. In a separate capacity, he also heads the Brazilian delegation to one of the sub-committees of ISO 14000.

Annex 2: Workshop Programme

Day	Timing	Activity	Facilitator(s)
13-10-96	All day 19.00-21.00	■ Arrival and Registration ■ Meeting of Case Studies Presenters and Familiarisation	UMP Cairo Office
14-10-96 Morning Session	09.00-10.00 10.00-10.30 10.30-11.00 11.00-12.30 12.30-13.00 13.00-14.00	■ Formal Workshop Opening ⇒ Welcome Address ⇒ Short Statements by Sponsors and Collaborators: UNDP, UMP, and SDC ⇒ Keynote Address: The contribution of micro-enterprises to environment management in developing countries ■ *BREAK* ■ Introductions, Workshop Protocol and Rules of the Game ■ Visit to Exhibition Stand ■ *LUNCH*	Dr. Mustafa Tolba Mounir Neamatalla Carl Bartone Moderator
Afternoon Session	14.00-15.30 15.30-16.00 16.00-17.30	■ Presentation of Case Studies: Regional Overviews + Detailed Country Cases: ⇒ Arab States ■ *BREAK* ⇒ LAC-Latin America and Caribbean	
15-10-96 Morning Session	8.30-10.00 10.00-10.30 10.30-12.00 13.00-14.00	■ Presentation of Case Studies (Contd.): Regional Overviews + Detailed Country Cases: ⇒ Africa ■ *BREAK* ⇒ Asia-Pacific ■ *LUNCH*	Moderator
Afternoon Session	14.00-14.45 14.45-15.00 15.00-17.00	■ Plenary Session: Synthesis of Key Common Issues and Challenges to MSEs Involvement in MSWM ■ *BREAK* ■ Working Groups: Key Thematic Issues	 Sandra Cointreau-Levine Special Evening Programme
16-10-96 Morning Session	08.30-10.00 10.00-10.30 10.30-11.30 12.00-13.00	■ Presentations of Working Groups Reports/Discussions ■ *BREAK* ■ Presentation on New Trends in Information Exchange and Experience Sharing (with Discussion) ■ *LUNCH*	Moderator Together Foundation
Afternoon Session	13.30-17.00 18.30-20.30	■ Field Trip to MSW ME Projects in Cairo - Zabaleen/Others ■ Evening Session for Optional Case Studies	UMP Cairo Office Moderator
17-10-96 Morning Session	08.30-10.00 10.00-10.30 10.30-12.30 13.00-14.00	■ Plenary Session: Synthesis of Key Requirements for Enhanced MSEs Involvement in MSWM ■ *BREAK* ■ Working Groups: Management Requirements/Strategies for better Partnership between Municipalities and MSEs ■ *LUNCH*	Sandra Cointreau-Levine Moderator
Afternoon Session	14.00-15.30 15.30-16.00 16.00-17.30	■ Presentations of Working Groups Reports/Discussions ■ *BREAK* ■ Closing Session: Presentation of Workshop Conclusions ■ Press Briefings/Launching of the Conceptual Framework for MSWM in Low-income Countries Document	Moderator Carl Bartone UMP Cairo Office
18-10-96 Round Table Meeting	 08.30-09.00 09.00-11.00 11.30-12.30 12.30-14.00	■ Departure of Regional Participants ■ UMP/SDC Collaborative Meeting ⇒ Opening Remarks ⇒ Review of Post Ittingen Activities/Workplan ⇒ Fostering Better Communication among Partners -Proposed Global Environmental Network ■ *LUNCH*	UMP Cairo Office Carl Bartone SKAT/UMP Together Foundation/ SKAT UMP Cairo Office

Annex 3: Folder of Overview Presentation

Micro-enterprises and Urban Environmental Management in Developing Countries

Carl Bartone, The World Bank and Roland Schertenleib, SANDEC

Outline of Presentation

1. Role of Micro-enterprises (MEs) in Urban Environmental Management
2. Findings of the SANDEC Study on Non-Governmental Refuse Collection in Low-Income Areas
3. Unresolved Questions
4. Expectations from the Workshop

What Are Micro-enterprises?

Definitions vary by country, encompassing terms typically including:

- traditional (artisan) and micro-scale enterprises (e.g., 1-6 workers)
- small-scale enterprises (up to 15-20 workers)
- cooperatives or associations of workers sharing ownership and management (not necessarily "micro") -self-organised, community-based, or promoted by NGOs or ESAs

Characteristics of Micro-enterprises

- Can account for up to 2/3 of industrial employment
- Often employed in the informal economy
- Low level of capitalisation
  - use simple labour-intensive technologies
  - typically obsolete equipment and inefficient processes
- Both managers and workers often relatively unskilled and poorly trained
- Lack of reliable information impedes improvements

Contributions of Micro-enterprises to Urban Environmental Management

- Delivery of environmental infrastructure and services in low-income communities
  - delivering water, building latrines and sewers, emptying latrines, collecting garbage, cleaning streets and drains, operating small disposal sites
- Promotion of conservation and sustainable resource use
  - collecting and recycling or reusing scrap materials
  - treating and reusing organic wastes in urban and peri-urban agriculture

Negative Environmental Impacts of Micro-enterprises on Cities

- Some MEs (industrial) are particularly polluting
  - tanneries, textile dyeing plants, dyestuff producers, metal working and electroplating shops, foundries, automobile repair shops and gas stations, battery production/recycling, pesticide formulation, paint shops, printing
  - located in low-income areas where basic sanitation is deficient and pollution goes unchecked or have environmental health impacts

- high occupational exposure and safety risks
- use of untreated human wastes in agriculture

Micro-enterprises and MSWM

- Services commonly provided by MEs
  - primary collection
  - street sweeping, drain cleaning, public cleansing - resource recovery, recycling and reuse
- Services sometimes provided
  - secondary collection and transport
  - final disposal

SANDEC Study

"Non-Governmental Refuse Collection in Low-Income Urban Areas"

(Pfammatter & Schertenleib, 1996)

- study of 18 schemes operated and managed at community level by CBOs or MEs
- focus on technical and operational aspects, key stakeholders and institutional arrangements, and cost recovery and financing arrangements
- assessment of basic conditions for establishing successful schemes

Conclusions of SANDEC Study

- Non-governmental primary refuse collection is suitable for increasing service coverage in low income neighbourhoods
  - potential for easing part of the burden of responsibility of public authorities
  - most cases studied, however, not self-sustainable
  - also, MEs face problems that can and do lead to breakdown of operations
- Keys for success
  - collaboration between public authorities and non-governmental actors
  - information to users and their involvement in decision-making
  - selection of affordable and sustainable technologies
  - assessment and transparent recovery of incurred costs
- Collaboration between public authorities and non-governmental actors (MEs/Coops/CBOs)
  - common failure to integrate non-governmental primary collection with municipal secondary collection
  - promising initiatives fail when not supported by and coordinated with public authorities
  - establishment of service-oriented collaboration fundamental to success of initiatives
- Information to users and their involvement in decision-making
  - successful primary collection requires user participation in choice of system
  - user capacity and willingness to contribute in cash or kind also important
  - public information and education is critical to raising awareness and creating user demand for service
- Selection of affordable and sustainable technologies
  - simple and low-cost solutions a prerequisite for successful primary collection systems by MEs and CBOs, manually operated handcarts or tricycles for areas with limited access, user contribution in kind to lower cost
  - for easy transfer, ensure compatibility of carts and communal storage systems with secondary collection vehicles

- Assessment and transparent recovery of incurred costs
  - poor knowledge of costs and cost recovery
  - while donations are helpful, system likely to collapse as soon as they are withdrawn
  - operating costs should be fully recovered from beneficiaries through simple fee collection
  - required investment capital can be financed through loans
  - ME model most successful since follows commercial principles (coops can do same)

Important Open Questions

- What is a suitable framework for collaboration between public authorities and MEs or CBOs?
- How can MEs or CBOs obtain loans at reasonable conditions?... and technical assistance?
- How to effectively promote user participation?
- How to improve design of communal transfer points for easy and efficient operation?
- How to integrate waste pickers into collection and recycling schemes while improving public health?

Expectations of the Workshop

- Report on and assess present state of knowledge
- Find ways of promoting the role of MEs in MSWM
- Recommend strategies for going from pilot projects to large-scale replication
- Develop linkages between ME development programme and MSWM programme
  - especially micro-credit programmes and technical assistance - suggested applied research agenda for future
  - priorities, who, how, what resources?

Annex 4: List of Case Studies and Authors

UMP Africa Region:

1. Regional Overview - by Osseynou Diop, Institut Africain de Gestion Urbaine
2. Ghana - "The participation of private sector/micro-enterprises in municipal solid waste management in Accra, Ghana" by Collins Annoh - Colan Consult, and Ato Brown - SKAT
3. Ghana - "An example of micro-enterprises participation in solid waste management in the city fringes of Accra, Ghana" - Experience of Temperance Domestic Services by Collins Annoh, Colan Consult
4. Burkina Faso - "Participation of a micro-enterprise in municipal solid waste management - The example of Wogodogo in Burkina Faso" by Osseynou Diop, Institut Africain de Gestion Urbaine
5. Burkina Faso - "Micro-enterprise participation in municipal solid waste management - The case of ECONFA, Ouagadougou, Burkina Faso" by Ousseynou Guene - CREPA, and Osseynou Diop, Institut Africain de Gestion Urbaine
6. Tanzania - "Municipal solid waste management in Dar es Salaam, Tanzania" by F. Magoma and N. Mwihava, Sustainable Dar es Salaam Project.
7. Mozambique - "Micro-enterprises as instruments of municipal solid waste management in Chamanculo suburban area pilot project" by Daude Carimo - Maputo Municipal Council and Farida Saifodine - Ministry of Environmental Affairs
8. Kenya - "Micro-enterprises involvement in municipal solid waste management - Some experiences in Kenya" by Abimbola Davies-Cole (Dr), Netwas International
9. Senegal - "The privatised system of municipal solid waste management in Dakar Urban Community, Senegal" by Djibril Doucoure - Dakar Urban Community, and Osseynou Diop - Institut Africain de Gestion Urbaine
10. South Africa - "The Clean and Green Campaign - Bester's Camp Central Local Council, Durban" by Debra Roberts (Dr) - Durban Urban Development Department.

UMP Arab States Region:

1. Regional Overview by Christian Arandel, EQI/UMP Coordination Office for Arab States
2. Yemen - "Mobilising of small micro-enterprises in the field of municipal solid waste management in Yemen" by Abdalla Sunbul - Association Cooperative for Cleansing Services, Sana'a
3. Lebanon - "Women participation in urban management: Sorting and recycling of urban wastes (cloth and glass) in Lebanon" by Dania Al Rafai - Makassed Philanthropic Association/UMP Country Coordinator (Lebanon)
4. Egypt - "Unleashing private initiative: Micro-enterprises development among the Zabbaleen of Cairo, Egypt" by Environmental Quality International, Cairo
5. Egypt - "Solid waste management and recycling possibilities in Aswan, Egypt" by Prof. Ahmed El Nimr - Civil Engineering Dept., Mansoura University and Consultant for the GTZ financed Solid Waste Management Aswan Project.

UMP Asia-Pacific Region:

1. Regional Overview by Antonio Fernandez, Training Officer, United Nations Centre for Regional Development, Nagono, Japan

2. India - "Community initiatives in municipal solid waste management: The case of EXNORA in India" by T. K. Ramkumar, EXNORA International, Madras

3. Thailand - "Recycle paper for Trees in Bangkok, Thailand" by Komson Hudtapaed - Media Centre for Development, Bangkok

4. Philippines - "Payatas environmental development programme: Micro-enterprise promotion and involvement in solid waste management" by Fr. Norberto Carcellar - Vincentian Missionaries Social Development Foundation Inc., Payatas, Quezon City, Manila

5. Bangladesh - "Community involvement through private initiatives: An alternative approach to solid waste management in Dhaka city" by Haroon Rashid, Syed Sadeque, and Iftekhar Haider, UNDP Water and Sanitation Programme Office, Dhaka.

UMP Latin America and Caribbean Region:

1. Regional Overview by Central Executor Association for Economic and Health Projects (ACEPESA) - Costa Rica, Institute for the Development of the Social Economy (IPES) - Peru and WASTE Advisors on Urban Environment and Development - Gouda, the Netherlands

2. Costa Rica - "Micro-enterprises in solid waste management in Cost Rica" by Francisco Rivas - Central Executor Association for Economic and Health Projects (ACEPESA) - Costa Rica

3. Colombia - "Promotion of enterprises supporting recyclers for the integrated management of urban solid waste in Colombia" by Maria Querubin - Fundación Social, Bogotá

4. LAC region - "Reflections on management approaches to solid waste collection" by Carlos Landin - Urban Management Programme- LAC region, Quito

5. Peru - "Solid waste management micro-enterprises in Peru" by Jorge Price - Institute for the Development of the Social Economy (IPES) - Lima, Peru

6. Brazil - "Educational kit for the promotion of recycling cooperatives in Brazil" by Christopher Wells, Brazilian Recycling Commitment (CEMPRE), Sao Paulo

7. Bolivia - "Association of micro-enterprises for solid waste collection (AMERESA) in the city of El Alto, Bolivia" by Mejia Gaston, Centre for Integrated Urban Development Services (PROA), La Paz

8. LAC - "Experiences in the promotion of municipal solid waste management micro-enterprises in Latin America (Cases of Peru and Ecuador)" by Ricardo Giesecke, Lima.

Global:

1. "Solid waste management in the city of Paris (1200-2000)" by Françoise Lieberherr - Urban Development Section, SDC, Berne.

Annex 5: Summary Sheets of Selected List of Case Studies

1. Payatas Environmental Development Programme Quezon, City, Manila, the Philippines
(Fr Norberto Carcellar)

Background

Quezon City is a vast rolling land of 153.59 sq. km. which is about one-fourth of Metro Manila. It serves as growth Centre for the surrounding towns northeast of Metro Manila. Barangay Payatas is a predominantly urban poor and densley populated Barangay in the North-eastern district of Quezon City. It has been the site of the city's solid waste disposal for over two decades and, currently, the main dumping ground for the city's garbage (now reaching 810 tons per day). Little was known about Payatas over the years until the official closure of the famous "Smokey Mountain" in 1993. The Payatas dumpsite has provided home and livelihood to about 4,000 scavenger families. The programme for the waste pickers is supported social investigation and community integration by the Vincentian Missionaries Social Development Foundation, Inc. (VMSDFI). VMSDFI entered the community in 1991. The pre-programme activities included contact-building, investigation of existing social forces and community-based initiatives, informal caucuses and meetings which adopted adult learning process and principles to elicit the main concerns of the people. Upon the decision to form a scavengers organization, intensive chapter level organising, coupled with service delivery for immediate needs, was undertaken in various communities. Also initiated were a micro-lending scheme (adapting a modified Grameen Bank model) and the organising of low-income women, particularly those engaged in waste recycling micro enterprise activities.

Characteristics of the Area of Operation:

Area:	3,019 hectares
Households:	4,000 (Scavengers)
Inhabitants:	90,000
Density:	Low
Income Level:	US$124.10/month
Access Roads:	56.3 kms - concrete 11.7 kms - asphalt 14.1 kms - dirt road
Topography:	rolling lands, ravines, low-lying areas

Technical and Operational Parameters:

Field Offices:	3
Equipment:	2 sets water drilling
Personnel:	1 Project Manager 1 Finance Manager 5 Field Credit Officers

Services Costs and Financing:

Equipment:	US$ 26,700 (grant)
Running/Admin:	US$ 23,000/year (grant)
Training:	US$ 11,500/year (grant)
Loan Fund:	US$ 230,000 (grant and local savings)

Organization and Management:

Initiated by:	NGO
Established in:	1990
Managed by:	Vincentian Missionaries Social Development Foundation, Inc.
Legal Status:	non-profit, non-stock organization
Relation to Community:	community-based self-help promoting institution
Relations with Other Groups:	*member of GO and NGO networks*
Technical Assistance from:	solid waste consulting firms, micro-financing consulting firms
Other Activities:	advocacy, social marketing, shelter-related projects (land tenure and housing, health, non-formal education)

Key Challenges:

Institutional:	institutionalisation of people's organization
Technical:	product development and occupational health practices
Financial:	financing of capital-intensive investments

Lessons Learned:

1. social mobilisation of communities is condition sine qua non for micro-enterprise promotion
2. support of home-based micro-enterprise activities reduces costs of promotion, favours existing technologies, and provides energy- and time-saving device to women entrepreneurs

2. Recycle Paper for Trees, Bangkok, Thailand
(Komson Hudtapaed)

Background

Paper is closely related to our daily lives. The need for paper is growing daily and so is the need to cut more trees down to supply the paper pulp mills. Nowadays, Thai people uses 20 - 22 kilograms of paper per year. Annually, Thailand needs 1.3 million tons of paper. To produce one ton of paper, it requires 17 mature trees. This implies that to meet Thai people's needs of paper, we have to cut down 17 million trees per year. On the other hand, this large amount of paper is being dumped as garbage. In Bangkok Metropolitan only, there are 7'000 tons of garbage daily. Amidst a vast amount of general garbage, almost a half is valuable and can be recycled. This means that there are over 6'000 tons of waste paper being dumped every day throughout the country. Today, paper factories in Thailand still need a large amount of waste paper to be recycled. Thailand has to import 400'000 tons of waste paper from foreign countries every day. This is not because we do not have enough waste paper, but we still do not have an effective system of separation and collecting waste paper from the offices and households.

The Media Centre for Development (MCD), a NGO based in Bangkok, has created and implemented the Recycle Paper for Trees to campaign and encourage separation and collection of waste paper in the offices of business companies, government agencies, academic institutes in Bangkok in order to deliver waste paper for recycling to reduce the amount of garbage and to save trees as well as to save energy and natural resources, and also to raise fund from selling the collected waste paper to the paper factories.

Characteristics of the Area of Operation:

Area:	Bangkok Metropolis
Offices:	1'700 member offices (no. until Sep. 1996)
Inhabitants:	
Density:	high
Income level:	
Access Roads:	good (but traffic jam)
Topography:	Metropolitan, flat

Technical & Operational Parameters:

Equipment:	5 vans 100 sq. metres warehouse collecting box (60 x 75 x 90 cm) made of cardboard
Others:	uniforms
Personnel:	5 core staffs/ 4 drivers / 4 collecting staffs / 1 warehouse keeper
% Female:	28.6 %
Type of service:	door to door
Distance to DS/TS:	1 km - 50 km
Frequency:	daily
Working hours:	8 hrs/day
Coverage:	
Productivity:	1.25 tons of waste paper a day or 30 tons a month (record in Sep. 1996)
Recycling:	Paper

Service Costs & Financing:

Equipment:	US$ 37'000
Personnel:	US$ 4'800 / mth
Maintenance:	US$ 1'600/mth
Others:	US$ 720
Financing:	Grant, sponsorship, donation
Frequency:	
Fee collection:	member donation (US$ 4 for one collecting box)
Amount:	
Total income:	US$ 80'000 per year (1996)

Organisation & Management:

Initiated by:	MCD (NGO)
Established in:	June 1994
Managed by:	MCD (NGO)
Legal Status:	In the process of establishing foundation
Relation with target group:	service provider
Participation:	collect waste paper in the box and donate to the project
Relations with Municipality:	
Relation with other groups:	
Supervised by:	
Working conditions:	all year
Health conditions:	acceptable
Technical assistance by:	
Other activities:	special event campaign

Key Challenges and Lessons:

Institutional: Foundation concerned with urban solid waste management and domestic fund raising campaign

Technical: box design for collecting waste paper, collecting system from the member office to the warehouse, targeting at collecting and managing system at the office building

Financial: self sufficient with no grant and making profit in 3 years

Social: pioneer in paper recycling from the office in Bangkok (Thailand) create paper recycling behaviour in the office and introduce recycling box as one of necessary office automation

3. Micro Enterprise Involvement in Solid Waste Management in Ouagadougou, Burkina Faso: The Experience of ECONFA

(Ousseynou Guene)

Background

Ouagadougou is the Capital of Burkina Faso. The city climate is soudanosahelian with annual precipitation between 850 and 900 mm and temperatures between 25 and 44 degrees Celsius. Ouagadougou had an estimated population of 600'000 (1990) with an annual growth rate of 6.4%. The City comprises five (5) municipalities divided into 30 administrative districts or sectors.

In 1990, the government of Burkina Faso decided to implement a new development policy aiming at combating poverty and unemployment. A National Employment Promotion Fund was created to support income generating activities. A group of youths benefit from this initiative and receive a small loan to develop commercial activities. According to the lack of garbage collection service, they decided to provide Municipal Solid Waste Pre-collection services against fees payment in high and medium income areas of Ouagadougou.

Characteristics of the Area of Operation:

Area:	The entire city (23'000 ha)
Households:	3000 hh scattered throughout the whole city
Inhabitants:	30'000 inh.
Density:	low
Income level:	medium to high
Access Roads:	mostly paved
Topography:	flat

Technical & Operational Parameters:

Equipment:	*5 tractors (1.5hp)* 5 trailers at 3 cum
Others:	Gloves, masks boots, uniforms
Personnel:	10 collectors, 5 drivers 2 supervisors, 1 keeper *3 fix & 6 part-time commercial agents*
% Female:	0
Type of service:	door to door and collective collection
Distance to DS:	15 km (average)
Working distance:	*50 km/d/veh. (average)*
Working hours:	8 hrs/d
Working Days:	6 d/w
Coverage:	5% of the entire population
Productivity:	*75 hh covered per veh. per day* Recycling compost project in pipeline Informal Scavengers Households Pre-collectors

Service Cost & Financing:

Equipment:	18'000 US$ (loan)
Personnel:	50 - 120 US$ / month for collection
Maintenance:	*1030 US$/mth*
Others:	Contributions in kind (fuel, office equipment, etc.) from various sources
Financing:	contractual payment
Frequency:	monthly
Fee Collection:	Direct user charge
Amount:	US$ 2/hh/mth US$ 9 to 160 per mth for institutional clients /hotels, industries, services)
Total income:	*5'000 US$ / mth for collection*

Organisation & Management:

Initiated by:	Cooperative
Established:	1990
Managed:	Local association
Legal status:	?
Rel. with Comm.:	Service provider
Participation:	bring to roadside/container
Rel. with Municipality:	client
Rel. with other Groups:	Supervised by Municipality
Working cond.:	all year
Health cond.:	acceptable
Technical assist:	CAPEO - CFD- FONAPE (NGO &ESA)

Key challenges and Lessons:

Institutional: Political commitment required to develop public/private partnership within already existing institutional and regulatory framework

Technical: Technical restrictions to enhance MSW collection coverage with non conventional means (tractors) within a low population density area

Financial: Possibility to finance innovative initiative from public and private contributions.

4. Micro and Small Enterprises Involvement in Solid Waste Management in Dakar, Senegal – A City-wide Initiative

(Ousseynou Diop & Djibril Doucouvé)

Background

With just under two (2) million people, the Metropolitan area of Dakar comprises 21% of the Senegalese population. Only 27% of households are connected to the sewerage system and less than 45% of the population has access to MSW collection services. After decades of ineffective MWSM programmes, a new policy is being implemented with the participation of private sector and the community. The new system was introduced in 1994 and after two years waste collection coverage has improved to 75% using a system of community micro-enterprises (handling community organisation for pre-collection and street and drain cleansing) which interface with local private small transport enterprises. The city is divided into 9 zones and this is allocated to five local contractors and with a sixth one handling the landfill site on contract. Currently the city covers 50% of the cost from local taxes and the other 50% is covered under a credit support arrangement under an IDA project.

Characteristics of the Area of Operation:

Area:	The metropolitan area
Household	75% of the hh
Inhabitants:	1'373'725 inh
Density:	medium
Income level:	low to high
Access Roads:	mostly paved
Topography:	flat

Technical & Operational Parameters:

Equipment:	various equipment at different capacity
Others:	Gloves, masks boots, uniforms
Personnel:	1136 labourers 174 overseers 27 supervisors 110 sweepers
% Female:	30
Type of service:	door-to-door and collective collection
Distance to DS:	30 km (average)
Working hours:	8 hrs/d
Working Days:	7 d/w
Coverage:	75% of the entire population
Productivity:	variable
Recycling:	formal and informal Scavengers Households Pre-collectors

Service Cost & Financing:

Equipment:	of 5 existing MSEs from 86'750 to 372'460 US$ per collection zone
Personnel:	83 - 144 US$/month
Maintenance:	–
Others:	–
Financing:	contractual payment
Frequency:	monthly
Fee Collection:	MSWM Tax
Amount:	US$ 3 to 12/hh/mth
Others Fin. source:	Int'l cooperation

Organisation & Management:

Initiated by:	CUD & AGETIP
Established:	1995
Managed:	Private Sector
Legal status:	Private
Rel. with Comm.:	Service provider
Participation:	bring to roadside/container
Rel. with Municipality:	client
Rel. with other Groups:	CAMCUD = Confederation of CBOs, Supervised by AGETIP through consulting firms
Working cond.:	all year
Health cond.:	acceptable
Techn. Assistance:	CUD and Consulting firms

Key challenges and Lessons:

Institutional: Intermediary organisation (AGETIP) to build and develop public/private partnership

Technical: Utilisation of conventional/traditional technologies to collect and convey MSW

Financial: Difficulty to recover MSWM services costs and to ensure a sustainable financing system

5. Micro-Enterprise Experience in Waste Collection in Villa Maria Del Triunfo - Lima, Peru

(Jorge Price)

Background

Villa Maria del Triunfo (VMT), one of the low income populous districts in the southern part of the city of Lima, is where many marginal-urban denominated zones with irregular topography (sandy ground with steep slopes and unpaved roads) are found. It has a territorial extension of 70.57 km^2 and an estimated population of 263'554 (1993). The municipality in this district has a very limited capacity to offer the public sanitation service, especially in the ghetto homesteads. One of the homesteads which is most affected by this problem is "Villa Poeta Jose Galvez", where the garbage collection deficit reaches 80%. In order to overcome this situation, the municipality decided to contract a private micro-enterprise association in April 1991 to manually collect the domestic waste and transport it to the land fill. The technical design was elaborated by an NGO, The Institute for the Promotion of the Social Economy (IPES), at the request of the community leaders. The design considers the use of local non-conventional low cost technology and the participation of the community members themselves in the offering and supervision of the service. The principal information is summarised as follows:

Characteristics of the Area of Operation:

Area:	10.85 km^2
Households:	7'012
Inhabitants:	49'084
Density:	low
Income level:	low
Access Roads:	unpaved, earth
Topography:	sandy, irregular slopes

Technical & Operational Parameters:

Equipment:	8 1 m^3 cargo-tricycles, 1 50 HP tractor, 1 cart, one high-sided truck
Others:	Uniforms/boots/gloves/ respiratory masks
Personnel:	21
% Female:	59 %
Type of service:	door-to-door
Distance to land fill:	10 km
Frequency:	three times weekly, work daily
Working hours:	8 hrs/d
Coverage:	100 %
Productivity:	0.86 ton/worker/day
Recycling:	Households / collectors

Service Cost & Financing:

Equipment:	US$ 9443.67
Personnel	1'550.10 US$/month
Maintenance:	513.54 US$ / month
Others:	US$ 91.30
Financing:	contractual payment
Frequency:	monthly
Fee Collection:	municipal taxes
Amount:	US$ 1.85
Total income:	US$ 2'654.55

Organisation & Management:

Initiated by:	community leaders /NGO
Established:	1991
Managed by:	associated board of directors
Legal status:	Limited Society (SRL)
Rel. with Comm.:	Service provider
Comm. Part.:	bring waste to roadside, initial organisation, control
Rel. with Muni.:	client/supervision of the service
Rel. with other Groups:	Member of the Environmental Health Micro-enterprise association
Working cond.:	average
Technical assist:	IPES
Other activities:	Environmental education of the population.

Key challenges and Lessons:

Institutional: the desertion of some of the associates-workers due to the economic problems faced with the municipalities.

Technical: The use of cargo-tricycles in the areas with steep slopes demands very much physical effort on the part of the workers

Financial: 1) The population served does not pay for the service on time, 2) Delinquent payment by the Municipality and 3) The contract was not renewed, and the M-E operated for 7 months without payment.

Social: The non-payment culture of the population which considers that the government should finance the service.

6. Experiences in the Promotion of Municipal Solid Waste Management Micro-Enterprises in Latin America

(Ricardo Giesecke)

Background

The promotion of the concept and implementation of solid waste management micro enterprises as an effective, efficient, sustainable and modern solution to municipal solid waste management in developing countries has been on-going in the LAC region for some time. Through bilateral technical cooperation projects, regional technical projects carried out by GTZ and other actors, a lot of experiences have been generated. The table below gives a snap-shot or comparison assessment of Micro-Enterprises operations in three Latin American neighbourhoods in Peru and Ecuador.

	Cajamarca LIMDOVESA, PERU	**Quito 1 Obrero Independep. ECUADOR**	**Quito 2 Comité del Pueblo 1 ECUADOR**
Characteristics of the Area of Operation			
Area	300 Hectares	360 Hectares	150 Hectares
Households served	10.000	9.000	6.000
Inhabitants	50.000	45.000	30.000
Density	Low	Low	Medium
Income Level	Low	Low	Low
Access Roads	Unpaved	Unpaved	Walk sides
Topography	Flat-Hilly	Hilly	Flat-Hilly
Technical & Operational Parameters			
Equipment	8 Push Carts 3 Trylers 1 Tractor 1 Tip Truck	6 Push Carts 2 Tip trucks (3.5 ton each)	4 Push Carts 2 Tip Truck (3.5 ton each)
Other	Uniforms Boots, Hats & Gloves	Uniforms Boots, Hats & Gloves	Uniforms Boots, Hats & Gloves
Personnel	14 Collector 2 Drivers	12 Collector 2 Drivers	8 Collectors 2 Drivers
Type of Service	Door to Door	Door to Door	Door to Door
Distance to Disposal of Collected Refuse	Landfill 12 Km	Transfer St. 8Km	Transfer St. 6 Km
Frequency	Twice a Week	Twice a Week	Twice a Week
Working Hours	7 Hours/Day 6 Days/Week	6 Hours/Day 6 Days/Week	6 Hours/Day 6 Days/Week
Coverage	85 %	90 %	90 %
Productivity	148 Inhabit/ Collector-Hr	178 Inhabit/ Collector-Hr	166 Inhabit/ Collector-Hr
Recycling	Nil	Nil	Nil
Service & Finance Costs			
Equipment	US$ 70,000	US$ 40,000	US$ 30,000
Personnel	US$ 4,480	US$ 3,136	US$ 2,214
Maintenance	US$ 1,000	US$ 400	US$ 400
Others	US$ 17,890 PRE-INVEST.		
Financing	Contractual Payment	Contractual Payment	Contractual Payment
Frequency	Monthly	Monthly	Monthly
Fee Collection	Municipal Taxes	Electrical Bill	Electrical Bill
Amount	US$ 0.90 per hh/Month	US$ 0.65 per hh/Month	US$ 0.75 per hh/Month
Total Income	US$ 9,000/mth	US$ 5,900/mth	US$ 4,500/mth

	Cajamarca LIMDOVESA, PERU	Quito 1 Obrero Independep. ECUADOR	Quito 2 Comité del Pueblo 1 ECUADOR
Organization & Management			
Initiated by	Rutas S.A. Consulting Firm	EMASEO & REPAMAR/ GTZ Reg.Proj.	EMASEO & REPAMAR/ GTZ Reg.Proj.
Established in	Nov. 2, 1994	May 1996	May 1996
Managed by	LIMDOVESA	MSWM-ME 1	MSWM-ME 2
Legal Status	Formal & Private Enterprise	Formal & Private Enterprise	Formal & Private Enterprise
Relation with Community	Service Provider	Service Provider	Service Provider
Participation	bring to road side & *provide candidates*	bring to road side & *provide candidates*	bring to road side & *provide candidates*
Relation with Municipality	Service Contract	Service Contract	Service Contract
Relation with other Groups	Non	Non	Non
Supervised by	Municipality	EMASEO MSWME	EMASEO MSWME
Working Conditions	All Year	All Year	All Year
Health Conditions	Acceptable	Acceptable	Acceptable
Technical/Administr. Assitance by	Hired Local Consultants	EMASEO MSWME	EMASEO MSWME
Other Activites	Street Sweeping	na	na

Key Challenges and Lessons:

- **Awareness:** There is a need for awareness creation and a political decision from the City Mayor and his Municipal council. This requisite must be seen as a SINE QUA NON factor.
- **Cost:** The running costs of the ongoing operations is very seldom really known and/or wanted to be made known. and if cost are not known in full, this comparison can have foul results. This can also explain the fact that the establishment of real tariffs is almost never carried out leading to a long and difficult decision making process. Instead of going over the process of reorganizing the accounting systems used for the public cleansing services, the procedure of contracting will prove to be a direct way of establishing the costs for each and every service to be rendered.
- **Technology:** Other technologies such as non compacting oversized specially designed tipping trucks should be considered, as well as the employment of less complicated technologies for primary collection to cope with difficult to serve areas (such as narrow streets, unpaved roads or hilly neighbourhoods).
- **Sanitary Landfills:** Only very few municipal authorities are aware that a public cleansing service that doesn't include a proper final disposal of collected refuse, such as a sanitary landfill (suggested for developing countries), is an incomplete cleansing service, and therefore the monies collected from the service users are used to pay for an incomplete service that is probably creating a more complicated problem that will increase public health hazards risks because of the pollution of land, water and air.
- **Contractual Procedures:** The contract must be prepared with the full participation of the municipal authorities. The duration of the contract should be at least as long as that included in financial conditions obtained by the contractor.
- **Planning and Management:** Almost none of the Municipalities have an adequate managerial structure for waste management, mainly because the common belief within local governments is that there is no need for professionals to deal specifically with the solid waste management services. Part of the awareness raising activities have to deal with this problem.

7. The Zabbaleen Settlement - Manshiet Nasser Cairo, Egyp
(EQI)

Background

In Cairo, responsibility for the management of the solid waste system is currently shared by the Cairo Cleaning and Beautification Authority (CCBA) and a traditional private-sector waste collection system that has evolved over the last fifty years. This system served Cairo relatively well until the mid-1970s, when it began to fray under the pressure of the capital's explosive growth. The fragmented character of the work force and the informal work arrangements limited the system's ability to meet the needs of the rapidly expanding city. In cooperation with EQI and two NGOs working in the scavenger community - the Association for the Protection of the Environment and the Garbage Collectors Association - the municipality opted for a franchise arrangement in which the Zabbaleen (garbage collectors) were organized into more than 80 small independent companies, each responsible for a terrain of about 500 households.

The division of Cairo into small bidding units was supplemented by several projects designated to improve the living conditions of the Zabbaleen: an urban upgrading program in the late 1970s and the Small Industries Project launched in 1983 promoting small businesses among the Zabbaleen. EQI worked with a handful of garbage collectors to help them set up small-scale waste recycling businesses. The entrepreneurs were exposed to low-cost technologies for waste recycling such as plastic granulation and composting, and were loaned the needed capital to purchase the equipment necessary for starting the new businesses. The impact of the project has been dramatic. Before its inception, not only was no recycling carried out in the settlement, but only a bare minimum of services were available. However, by 1993, just ten years after the project began, 215 flourishing enterprises had emerged. Of these, 42% were commercial establishments, 36% industrial, and 22% service related.

Characteristics of the Area of Operation:

Area:	Approx. 300 feddans
Households:	2075
Inhabitants:	15,577
Density:	High
Income Level:	Low
Access Roads:	Paved, graded
Topography:	Hilly

Service Costs & Financing:

Equipment:	US$ 380,000
Personnel:	US$ 92,000/mth
Maintenance:	US$ 11,500/yr
Financing:	Contractual payment
Frequency:	monthly
Fee collection:	municipal stamps
Total Income:	US$ 176,000/mth

Technical & Operational Parameters:

Equipment:	16 trucks 20 loaders 20 personal trucks
Personnel:	7,200collectors, 100 drivers
Productivity:	125 tons/hour
% Female:	60 %
Type of Service:	waste collection, processing, recycling
Frequency:	6 days a week
Working hours:	8-10 hrs/day
Coverage:	80%
Recycling:	collectors

Organisation & Management:

Initiated by:	NGO
Established in:	1974
Managed by:	Zabbaleen
Legal status:	Registered with the Ministry of Social Affairs
Relation with Comm:	service provider
Relation with Municipality:	Catalyst for municipality
Supervised by:	Board of Directors
Health conditions:	Poor
Working conditions:	All year
Technical Assistance:	EQI

8. Initiatives of the Association Co-operative for Cleansing and Environmental Services Sana'a, Yemen

(Abdalla Sunbul)

Background

As a result of the 1990 Gulf War during which one million Yemeni immigrants were repatriated to Yemen, Sana'a's population increased from 600,000 to one million inhabitants. This resulted in the severe deterioration of municipal solid waste collection services which could no longer face the sharp increase in waste generation. The Association Co-operative for Cleansing and Environmental Services, a private voluntary organization, was created in May 1993 to support the municipality in its solid waste collection effort by involving the private sector. In March 1994, an agreement was signed between the municipality and the new NGO to divide responsibility for solid waste collection in Sana'a. Under the agreement, the Association had the main responsibility for the collection of garbage from commercial outlets such as hotels, restaurants, industries, factories, markets, and hospitals. In 1994, a transfer of innovation sponsored by the Urban Management Programme for the Arab States took place to introduce low technology recycling in Sana'a.

Characteristics of the Area of Operation:

Area:	Commercial, restaurants prime residential areas
Household:	800 units
Inhabitants:	4800 persons
Density:	960 per sq. km.
Income level:	UD$ 6000 / family / year
Access Roads:	80% asphalted
Topography:	flat

Technical & Operational Parameters:

Equipment:	Eight 3 ton tippers (5 cum. each) One trailer and tractor (5-6 cum) used as a transfer station
Personnel:	20 labourers 10 drivers 5 supervisors
% Female:	0
Type of service:	door-to-door from residents and commercial areas once a day
Distance to DS/TS:	30/5 km (average)
Working hours:	8 hrs/d (two shifts of 4 hours each)
Working Days:	6 days/week
Coverage:	80%
Productivity:	90%
Recycling:	10%

Service Cost & Financing:

Equipment:	rented from small enterprises and municipality
Personnel:	contracted labour from market and paid overtime for municipal workers
Maintenance:	–
Others:	–
Financing:	self
Frequency:	monthly
Fee Collection:	direct collect each month
Amount:	US$ 10,000 monthly
Total income:	US$ 450,000 per year

Organisation & Management:

Initiated by:	Abdullah Sunbul
Established:	May 1993
Managed:	Association
Legal status:	Licensed by Min. of Social Work
Rel. with Comm.:	Service provider/Excellent
Participation:	bring to roadside/container
Rel. with Municipality:	agreement of cooperation cancelled by new Minister
Rel. with other Groups:	Excellent
Supervised by:	Min. of Social Work
Working cond.:	all year
Health cond.:	acceptable
Techn. Assistance:	UMP Arab States

Key challenges and Lessons:

Institutional: minor conflict with responsible ministry (Construction, Housing and Urban Planning) who has been forced by the private sector to stop its own collection activity.

Technical: no problem since equipment are rented.

Financial: lack of financial institutions to fall on for operational and capital funds.

Social: nil.

9. Waste, Waste Nothing but Waste – From 12th-19th Century Paris to 20th Century Developing Countries

(Françoise Lieberherr-Gardiol)

Are you into "waste speak"? And if you are, is this a sign, in our high-tech society, of technical progress, public salubriousness and hygiene-conscious morality? Waste is in any case a **paradoxical topic** because it is a problem which is omnipresent, yet neglected and controversial. For nearly a thousand years, Western cities were indescribably filthy. A bare century ago, household waste and refuse were just tossed into the street. However, whereas a Parisian generated 200 grammes of waste per day back in 1872, he or she produced eight times as much in 1994, while the inhabitants of the United States are responsible for two kilos each per day. This avalanche of garbage has become a headache for modern societies, both North and South. A brief review of the history of refuse in Paris from the 12th to the 19th centuries (1) may well throw some light on the complex issues involved in garbage collection and their economic, social, political and cultural repercussions. For those in search of solutions for the specific situations of developing countries, this history should help us to gain a better understanding of the obstacles, constraints and potential of refuse, on the one hand, and to demystify the so-called success and smug superiority of Western countries on the other.

Lutetia, city of mud

Black, evil-smelling mud covered medieval city streets. This product of soil, household waste, stagnant water, human excrement, horse manure and pig and chicken droppings transformed streets into a disgusting quagmire. In fact, "Lutetia" itself, the old name for Paris, comes from the Latin lutum, meaning mud... For centuries, cities were ravaged by **deadly epidemics**, but public opinion established no causal link between filth and illness. People believed that the influence of the stars caused epidemics and that, on the contrary, refuse had beneficial effects.

Philip II was the first king of France to attempt to combat this mud. In 1184, nauseated by disgusting odours, he ordered the streets to be paved and cleaned. The citizens of Paris were responsible for executing this task and for maintenance work, while the Provost and his assistant, the "voyer de Paris", ensured the tasks were carried out. **In terms of a police operation**, the cleaning up of the capital was a failure: only two streets were paved and cleaning was quickly abandoned. In 1348 during a Black Death epidemic, the Provost of Paris issued an ordinance instructing citizens to sweep the street in front of their homes and to have mud and refuse transported to designated sites. However, despite fines and severer punishments ranging from imprisonment on bread and water to the pillory (1395), little heed was taken of the regulation.

In the Middle Ages, pigs helped to keep the streets clean by eating all the edible residue discarded there. However, following various accidents in Paris, "wandering pigs" were no longer allowed to roam freely and had to be kept on a leash according to a 14th century ordinance. Incidentally, it's worth mentioning that **"cleaner pigs"** were found in New York until the 19th century. (2)

Following the failure of refuse collection by the inhabitants, Louis XII decided in 1506 that the monarchy would take charge of it. The creation of a "mire removal service" marked the start of the Renaissance, a service which was financed several years later by a special levy which was also intended to cover lighting. The police commissioners set the amount payable under the head of the **"mire and lanterns tax"** in their respective districts, but this new tax met with general hostility and the ordinance of 1506 fell into oblivion. The years passed, with new initiatives launched by François I to clean up Paris. In 1562, a royal decree obliged citizens to sweep the streets in front of their doors and to deposit mud, garbage and refuse in baskets. Confronted with difficulties in bringing in the tax for collecting and transporting the garbage, Sully later assigned the whole operation to a private entrepreneur. However, levying of the tax by Raymond Vedel, alias La Fleur (the Flower), sparked a riot and with it, the **failure of moves to privatize waste collection** (3).

Louis XIV in his turn decreed measures, including the edict of 1666 specifying collection routes and schedules. Every morning, at 7 am in summer and 8 am in winter, Master Fifi rang a bell to tell peo-

ple it was time to put their refuse in front of their doors, and he could fine those who did not comply with the regulations. However, in 1697, the police lieutenant responsible for the edict noted that "the inhabitants of the Saint Denis district are still throwing all their water, garbage, filth, urine and other matter out of their doors and windows day and night". It was at this time that people began thinking about "correcting the air" by wanting to ban garbage and wash the streets, but to no avail.

In the late 18th century, a competition was held to find the best ideas for cleaning Paris streets and getting rid of the garbage generated by some 600 000 inhabitants. Various social reformers took part and all suggested mobilizing beggars, paupers, invalids or the elderly who were a burden on society to roam the streets with brooms and carts for cleaning up the garbage – projects which eliminated waste and tramps in one fell swoop! Other European cities provided an example. In Berne, for instance, convicts and women prisoners chained to carts cleaned the streets every morning.

Regulations, taxes, cleaning services, privatization, but indifference and resistance

However, despite five centuries of royal edicts on urban cleanliness, Parisians continued to show the same disregard for and resistance to the problem of waste. It was not until the early days of the Revolution, in 1799, that the first law was promulgated defining the organization of street and square cleaning throughout France, as a service paid for out of taxes. While sweeping of the road was the responsibility of the local residents, owners and tenants, private companies sprang up to do this work for a fee. Police monitoring still encountered the same opposition, and the streets of the capital as well as the banks of the Seine were a disgusting sight: oily, slippery mud, all kinds of refuse, broken glass, animal carcasses, putrefaction... a situation that was just as widespread in other European cities. Thus, in the mid 19th century, cleaning the capital was not only a complex business, involving participation on the same street of residents, private entrepreneurs and public municipal companies working to commission, but also still as inefficient.

Before the end of the 19th century, a new current of hygienic thought, inspired by Pasteur's discoveries about germs, raised public awareness of the issue and prompted greater State intervention in the form of drinking-water and sewage systems and refuse-collection services. **In 1883, Prefect Poubelle** compelled all house owners to provide their tenants with special 40- to 120-litre steel or metal-lined wooden containers. Three different recipients were compulsory: one for bio-degradable matter, one for paper and rags and the third for glass and crockery. This order triggered a general outcry from owners, because it meant fresh expenditure for them, from caretakers, because it meant more work for them, and from rag-pickers because they feared loss of their livelihood, and violent press campaigns capitalizing on sensibilities to new regulations about drains reinforced this resistance. The new regulation was only very partially complied with and did not take on concrete shape until the advent of bins with lids in 1940. And sorting of waste has still not been achieved in the 1990s.

Taking their pick: waste not, want not

Rag pickers occupy a specially meaningful place on the great waste scene and are found in Paris, Europe and throughout the world.

From ancient times, the socially deprived have managed to survive thanks to refuse. In France, the picking over of waste was organized into **professions** named after the various types of old textiles intended for paper-making (eg "pattier", "drillier"). And then there were the "rag pickers" of New York, the "aradyidjian" of Istanbul under Süleyman the Magnificent, the travelling people in Ireland, etc. etc.

At all times, the rag pickers of Paris were **despised and marginalized** as the lowest caste, subjected to **social exclusion and harassment from officialdom**. From 1698, an ordinance forbade them to "wander around and walk in streets and suburbs before daybreak" on pain of fines and corporal punishment. A further ordinance dating from 1828 obliged them to wear a tag (4) with their name, first name, nickname and serial number. But this effort at control was a failure because several thousand tags were passed around with nicknames such as "Le Frileux" (Shivery), "Plein

de Puces" (Fleabag), "Mort au Vin" (Death by Wine), "Pas de Chance" (No Luck), "La Chaufferette" (Footwarmer) and "Trompe la Mort" (Death Dodger). In 1872, following a new regulation, six thousand tags were issued for some 30 to 40 thousand permanent rag pickers, most of them working illegally, and not counting seasonal workers.

A **very negative social image** reinforced and underpinned this marginalization of rag pickers. Designated as tramps, barbarians and savages, they were held responsible for all society's ills: epidemics, thefts, violence and urban insecurity in general. Rejected and suspect, rag pickers were kept away from the heart of the city throughout the ages. They were relegated to areas outside the city walls like beggars in the Middle Ages, and in the 19th century, took up residence in the quarries of the Tombe Issoire where the carcasses of Parisian charnel houses were dumped. Later, they settled in a kind of architectural no-man's land outside the city walls in shacks made of planks, metal sheeting and cardboard in an unofficial suburb occupied by 50 to 100 000 people. This district was a source of concern to the middle classes who saw it as a gathering place for criminals, delinquents and fallen women.

The rag pickers of Paris were organized in a **hierarchical, disciplined corporation**. In the second half of the 19th century, it was structured as follows: at the bottom, there was the night "collector" who did not have his own collection "patch" or tools and who covered huge distances to pick up the basest of refuse. He was promoted to a "runner" when he had equipped himself with a basket (carried on the back), a lantern and a hook with which he combed through toothless brushes, old clothing, fish heads or vegetable peelings all night long. At a still higher level, the "placer" had his own "patch" and had "first pick" of the refuse from eight to ten buildings. Once his barrow was full, he started sorting out the different types of rubbish as well as the various parts of an object, for example the buttons, lining, wool or silk of clothing. A placer was obliged to work on a daily basis for fear of losing his patch. Patches were a much sought-after commodity and were handed down from generation to generation or sold like lawyers' practices at prices varying with the wealth of the district. In the late 19th century in Paris, they cost 10 to 50 francs on average, and up to 400 francs in the middle-class districts around the Opera and Chaussée d'Antin. At the top of the pyramid were the master rag pickers, genuine merchants with storage sheds and weighing scales. They employed workers who classified waste for ten to twelve hours a day before it was sent on carts to wholesale merchants specializing in glass, rags or tins. In 1900, there were about sixty large-scale merchants of this type in the Parisian rag-and-bone trade.

The variety of items recuperated and their recycling testified to the rag picker's ingenuity. No less than 400 different types of woollen, silk, cotton and canvas rags were bought by industry for various purposes. Empty bottles, broken glass, corks, straps, old paper and boxes, metal extracted from buttons or picture frames, shoes, crusts of bread, orange peel, bones or even small locks of hair – all were reworked, remodelled and resold in various forms. However, after a long period ending around 1870, the **traditional rag-and-bone trade declined** in the face of competition from industrial development and the invention of new manufacturing processes. In 19th century France, rag picking provided some 500 000 persons with a livelihood. Some rag pickers tried to resist this process of decline by creating associations, cooperatives and, in 1884, even a trade union which published "Le réveil des chiffonniers" (The Rag Pickers' Reveille), waging "the fight against the big grabbers". However, these initiatives remained marginal because they ran counter to the rag pickers' independent ways. In the 20th century, charitable works took up where the rag pickers had left off.

A few lessons

We can draw the following three general lessons from this brief historical overview.

1. First, when it comes to garbage, there is **no sense of collective responsibility for public spaces** and shared living areas. Waste management over the centuries was the result of continual clashes between the authorities and the users as to their respective tasks and the taxes to be paid. Today, in the closing years of the 20th century, and despite growing ecological concern, this lack of civic responsibility persists and behaviour patterns are being altered not so much by environmental consciousness-raising as by compliance with government laws and taxes.

2. In eight centuries, the only **genuine change in waste policy** came about under the influence of a **key ideological factor, the public-health** revolution brought about by Pasteur's scientific research into pathogenic germs. As has already been said, the refuse which flooded streets and lanes was not perceived as being detrimental to health but as a positive factor with beneficial properties. Despite a few medical commentators who expressed concern about the quality of water and the air from the 17th to the 19th centuries, like Louis XIV's physician who recommended in 1650 that "people should no longer drink river water", there was no marked improvement. It took a new awareness of health and death generated by the hygiene movement in the last third of the 19th century for waste to be systematically eliminated as contaminating substances. From then on, a healthy, clean body as well as rooms which had been cleaned and aired became part of codes of good family conduct. The triumphant hygiene movement propagated Pasteur's ideas through the Press and public education, where Jules Ferry replaced catechism lessons with hygiene lessons in 1882. There was a similar movement in the United States where cleanliness also came to be regarded as a duty and hygiene as a means to achieve physical and moral improvement. The **environmental awareness** triggered by the first ecological movements and the oil crises of the 1970s seems to be another **key factor for the 20th century** as regards prompting waste management progress. The true **challenge** is changing **people's mentality** to obtain support for technical and financial measures. **Active user participation** is born of understanding waste-linked problems and risks, learning new environmental standards and accepting regulations and taxes. That is the price of the ideological revolution needed today for the 21st century.

3. The collection of waste was the preserve of the **lowest social categories**. Rag pickers, the poor and beggars were all **marginalized and excluded**. This characteristic has been repeated down through history and across all continents. Today, in the developing countries, in Tananarive, Mexico, Bombay, Surabaya or Cairo with the "zabbalines", a scorned Coptic minority, garbage collectors and sorters work in material and moral destitution. These waste workers, in their fight for economic survival – abandoned children, landless peasants, ex-convicts, urban marginals – need to be **socially upgraded and given an identity**. Organizations in Madras, India like RED (Rag-Pickers Educational Development) or EXNORA with its "street beautifiers" have grasped this message. Education, uniform and association enable these people to achieve a social status, as well as recognizing their environmental and social utility in the face of the major challenge of waste management.

Waste: from the economic to the ecological and social

By introducing explanatory distance, the historical view makes it possible to relativize the significance and urgency of the refuse problem. When it comes to solid waste management, it is now important to avoid arguing solely from an economic and technical perspective, as the dominant opinion would like, but to **incorporate the social and ecological dimensions**.

Late 20th century experience in the developing countries (5) has clearly shown that cumbersome, technocratic approaches are not only extremely costly, swallowing up to 50% of a municipal budget, but also that they do not reach the poorest members of the population. The **limits and ineffectiveness of passive transfers of western technology** have been clearly demonstrated in countries of the South with its totally different conditions as regards quantities and composition of waste, urbanization models, width of streets, vehicle maintenance, staff qualifications or commune and user financial resources. In Third World cities, the diversity of situations calls for **appropriate alternative solutions**. In China, India, the Philippines, Mali, Burkina Faso, Brazil or Colombia, **innovative local initiatives** are multiplying. Communities supported by non-governmental organizations and small companies are mobilizing to create their own waste management services with informal economic networks, decentralized mechanisms, locally made tools and simple, small-scale procedures involving user participation. This also means that, to obtain recognition of the competence and efficacy of their actions, these users-cum-players must defy the prejudices of technocrats and engineers about informal organization, recycling and poor people in general.

Obviously, waste management should not be considered solely as a technical and economic project, but also as a social one, from the dual angle of **social crisis** and **social creativity**. On the one hand, in the conditions of poverty and unemployment in which many city-dwellers of the South live, activities relating to collection preliminaries, collection itself, sorting and recycling can create revenue, small-scale crafts and informal jobs. On the other hand, city dwellers show considerable ingenuity, either in their innumerable recycling operations or in the setting up of informal services which can, for instance, combine preventive and curative action by health committees or provide a first job for unemployed university graduates and a survival income for female heads of families, etc. It contributes to reinforcing social status, solidarity and community cohesion. It also gives the most deprived **a sense of citizenship**. Thus, as a social project, waste management has **a significant impact on poverty, employment and health.**

Seen from the ecological angle, much remains to be built up, beginning with awareness at all levels – from the grass roots to central government – of the risks to the health, habitat and environment of a city and its region. Moreover, the totally negative perception of **waste as pollution** needs to be amended to a **positive concept of waste as resources**. In a new philosophical movement centred on resources as capital, the majority of waste is considered as resources which can be reused and recycled, considerably limiting the process of producing and handling waste. The call for **sustained development** proclaimed at the Rio Earth Summit reminds us of our solidarity obligations towards the world around us, not only for present generations but also for all future generations of our children and grandchildren. This means **changing society's use of the environment and resources** – water, air, soil, forests – through more rational and responsible consumption all over our Planet, both in the North and South.

Civic responsibility for the future

On the eve of the 21st century, the city-dweller is an omnipresent reality which shapes our life. Thus, in negotiating our survival, solid waste management is a major stake. From now on, we have to seek and dare to implement appropriate solutions, rejecting triumphant technological scenarios or apathetic despair and opting for innovative, alternative scenarios and the hope of social solidarity. Modernity should not be sought on western lines or in technological imitation, and even less in social apartheid directed at "waste-collector pariahs". We have to have the **courage of our civic responsibility** towards the environment, as part of a **right to a city for everybody**. It is also a **democratic responsibility** which is indispensable for the 21st century.

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Waste Collection In Paris From The 12th To The 19th Centuries

date	measures	operations	execution	result
1184	royal decree	paving of streets cleaning of streets maintenance	citizens of Paris supervision by the Provost "voyer"	failure
1348	police ordinance	cleaning of streets mud and refuse collection and transport	residents of Paris verification by police sanctions (fines, imprisonment)	regulations not obeyed
1506	setting up of a royal "mud removal" service	collection and removal of garbage levy of "mud and lantern tax"	royal services verification by police commissioner	general hostility decree sank into oblivion
1562	royal decree privatization of refuse collection by Sully	sweeping of streets refuse in baskets collection and transport levy of tax	Residents private enterprise	public uprising against tax failure of privatization
1666	royal decree collection routes and schedules	sweeping of streets refuse in baskets collection and transport	verification by police fines	indifference
approx. 1780	competition on cleaning of streets and refuse removal (social reformers)	sweeping of streets transport of refuse	beggars, paupers, invalids, elderly, tramps	
1799	1st French law on cleaning streets and squares	sweeping of streets waste collection and transport service paid out of taxes	residents and private enterprise verification by police	resistance, indifference
1883	Decree by Prefect Poubelle	waste in closed containers sorting of waste: bio-degradable matter, paper-textiles glass-crockery collection and transport municipal tax	owners and caretakers inhabitants municipality	general outcry organized resistance

Annex 6: Reports of Working Groups on Issues and Constraints

Group 1

What are the key issues in enabling MSEs in MSWM to obtain investment capital and obtaining cost recovery for the same to meet cash flow requirements?

- We need a sound feasibility study to know how risky investment could become. Donations and banks are two different things - the former is less sustainable than the latter. A feasibility study would involve a promoter of some kind, whether NGO or government. So the question is: should MSEs be formal or informal? With formal structures, there is a trip to the bank/financial institution and set procedures to be followed. With the informal alternative, there is no security to offer the bank, one must find an association which gives guarantee of some kind. The idea of "group responsibility" is interesting: the people involved are a social guarantee of paying back interest and loan. There is need for a good business plan that delineates exactly what is to be accomplished.

- There is always a risk in the informal sector that if the NGO takes money, the source (usually a bank) asks, "Where did the money come from?" Grant money is not secure enough, there has to be involvement of a bank with fixed guarantee and rules. This gives it the flavour of a sound project and not just a charity attempt. This way things are more fixed, especially since the co-operative has to adhere to others' rules and is not involved in making its own haphazard ones. This kind of formality makes for a "bankable" project, not just a random attempt. A common problem is that, if the applicant is a weak one with no backing in funds, then banks refuse to be supportive because of the lack of guarantee that they will get their money back. The need, therefore, is to establish banks that create links between donations and loans.

- The Latin American experience with the "Fundacion Social" starts the projects out with donations-seed money- which are later paid back on a monthly basis when these projects begin to invest.

- In the USA, there is the mechanism of "Venture Capitalism": a coalition of investors formally invest seed money in business' over a 3-5 year period. This provides for equity investment and management expertise in the enterprise.

- The organisation must develop its own administration and strategies to keep the money once it is made so that it doesn't have to start all over again every time.

- An example in Yemen: The legal structure of cooperatives is 21 persons who are also shareholders. In order to encourage MSEs, we must encourage the legal shape, elect a formal board, and deal with local government.

What are the key issues in obtaining public cooperation with services and cost recovery activities of MSEs in MSWM?

- Public cooperation and the lack thereof is a definite problem: People are not willing to pay for services. Government is not serious so people are dissatisfied, thus there is no payment. Government's level of services are not appropriate. There is a gap between level of satisfaction and level of government service creating misconception on a large scale. Therefore, there ensues a lack of community participation and interest.

- It is not sufficient to only talk about financial issues, we must also talk about technicalities of MSWM - what the business is all about; adequate technical assistance to carry out the work.

- SWM is not simply a problem of transportation as many would have it. We are not just talking about "picking it up and getting it out", because the question is where is that "out" exactly? SWM supposes so much more - it is a management, a venture on its own. Dealing with final disposal sites is a critical and continuing problem.

What are the key issues in replicating/transferring pilot MSE systems of pre-collection, recycling, resource recovery?

- Only if municipal governments are willing to take care of the interface to the second stage, which is how and where it goes after primary collection, can we realistically begin to plan SWM. If there is no guarantee in this, then it's no use to even begin. -This is related to the first question: how feasible and financially sound is all this? A marketing study would be valuable: how good is the market for these "wastes", these secondary items? You have to know that there will be buyers, that products will indeed be sold so that there is recovery and profit. This also helps manufacturing. Pre-collectors should pay good license to municipalities and the latter should control access by giving out areas and allowing the function of natural monopoly. Municipalities must provide political will/decision before anything.
- What is "public service"? It is not just "wrap and throw" or "pick up and take away". Public service must be related to SWM. There is not enough discussion about the real problem in MSWM: Is it all about the poor surviving on garbage collection, urban overcrowding, or sanitation? Sanitation is definitely central: when this issue is taken care of, then all else should follow. The idea is: collect-compost-dispose, it is the main sequence and the priority of public service. All other considerations come later, i.e. finance. The idea is not only "whoever pays gets the service" because then the health hazard is ignored.
- MSEs are all about privatisation and more economical than municipality projects.
- Information dissemination and training are also crucial in this collection domain.
- "Private" land fills should be ruled out; these should naturally be for public use, everything else can be privatised.
- Composting can be done on micro and macro levels so that containers can be picked up monthly instead of weekly. This allows for more profit, but of course asks for more space, which is still a problem.

Additional Questions/Issues

1. Space is a constraint. Facilities for composting need space. If there is no donor, then there is no guarantee of space.
2. The issue of intermediation.
3. Legitimisation of community-based privatisation that has self-sufficient, competitive administration. Instead of paying outside middle men, have your own.
4. What is preferable: informal or formal MSEs?
5. Reduction of costs in MSEs.
6. Reduction of recycling costs.
7. The issue of government support.
8. The role of taxes and customs.
9. Final disposal sites are a problem because they fill up and this leads to insecurity right from the start. Dumps should not exist, all should be land fills. Land fill should be environmentally sound, a health-conducive atmosphere, with a minimum of technology, so that workers are comfortable and feel like the place is truly their own. Land fills are economically important as regards their location: reduction of distances leads to reduction of fuel cost and these savings can then be invested elsewhere.
10. How to achieve trust between municipality and MSE? What are criteria for licensing and quality control?
11. Give sweepers stability-contracts and afternoon jobs in the very MSEs that they sweep for.

Group 2

What are the key issues that would enable MSEs to obtain investment capital?

- Enact regulations to support the activities of MSEs.
- MSEs need high management skills to be able to show the donors their capability of running the business.
- Informative material with simple guidelines about local credit schemes should be produced in simple language to bridge the gap between credit providers and MSEs.
- MSEs' activities won't be profitable unless there is a market demand for their services; they should, therefore, deliver efficient, low-cost services.
- Linking micro-credit programme with solid waste activities needs some sort of a mechanism, e.g. NGOs.
- Local governments should fund cooperatives. This has worked in Brazil because the government realised that MSEs are cost-savers.

What are the key issues that would enable MSEs to cover their costs?

- A charge for their services.
- Sales of their materials.
- Sponsorship.
- Large companies should pay for the waste they generate.
- The demand for services should be organised; MSEs need the support of the community.
- Examine more closely the possibility of exempting MSEs from taxes.
- Disseminate information on the benefits and costs of MSEs' services.
- Convince the public that what they pay MSEs is in exchange for a valuable service.
- MSEs must be legitimised.

What are the key issues that would facilitate the pilot MSE systems' replication?

- Select credible persons in the community who would give courses on the project. This won't work, however, unless there is an institution that would be willing to give some kind of initial financing.
- Public education is a key to alleviate the social stigma that is connected with garbage collectors.
- A need for public financing.
- Use of technical solutions that are appropriate to local communal conditions.
- A need for flexibility in programme application to avoid cultural and social resistance.
- Assess the existing situation in the community to build on the already established system.
- Recycling is only viable if the MSWM system is functioning adequately.
- Constraints are mainly institutional. Integration has to take place in the whole municipal system.

Additional Questions/Issues

1. How to create feasible enterprises?
2. Defining the role of municipalities.
3. How to ensure the fair payment of a fee for the services delivered by MSEs?
4. How to understand the evolution of MSEs over time?
5. How to bill citizens?

Group 3

What are the key issues in enabling MSEs in MSWM to obtain investment capital?

- The question pre-judges the issue by presupposing a need for capital and investment. MSEs investment should be small and they should look for technical innovations. The issue is SWM, not merely economics. The latter is incidental. Any SWM system, to be effective, should be community-initiated. Are independently started systems effective? What is meant by community? The question is one of demand and willingness to pay. Latin American sources of funding are NGOs.
- One problem is that some MSEs do not get the proper support because of lack of links with municipal authorities. We need to distinguish between the different types of MSEs:
  - Collection
  - Disposal (Economic aspects)
  - Recovery
  - Recycling (Community-based)
  - Municipality Managed
- It is important to figure out the target groups that the services are created for. Who is being served? We have to find the appropriate mechanism for creating the initial investment by figuring out exactly who the target group is.

What are the key issues that would enable MSEs to cover their costs?

- It is linked to the previous issue of "Who are the target groups served?" This is related to the legal framework. Cost/capital requirements should be broken down into two groups: Collection and Recovery, each of which to be decided by the local community.
- Sometimes we have to create demand by public awareness campaigns if they're not already functioning.
- One problem is how to incorporate poorer areas in order to integrate them in SWM Systems.
- The priority is the health issue. In some countries, governments spend more on curing people injured or taken ill by SW than on preventing that which causes the problems.

What are the key issues in obtaining public cooperation with services?

- It is important to talk to people, but who will pay for it? Very often, the municipality needs public participation.
- It is not helpful to talk about what municipalities "should" do. You need to look at the real and not ideal world when talking about municipalities. People have to feel that they are actually affected by what is going on in order to get interested and eventually involved. What is the average municipal engineer's role? He's more concerned with doing his job as he sees it, but does not really get involved.

What are the key issues in replicating/transferring pilot MSE systems of pre-collection, recycling, resource recovery?

- MSEs are successful because of dynamic leaders, which does not necessarily help in replicability. Therefore, we need a system that is self-sufficient and that is not dependent on one person. The achievement of this, in itself, is a difficult task.
- Replicability can be ensured by a particular demonstration.
- It is difficult to move from formal sector to smaller informal sectors. For replication we need the documentation of process: to put it down on something that can be transferable. This is important in facilitating documentation processes so that replicability can be used.
- We need "Environmentally Sound SWM" by discouraging scavenging. Nothing can be scavenged from an environmentally-sound SW facility.

Additional Questions/Issues

1. Overall risks: (i.e. Health, etc.)
2. The issue of disposal - there is no control over where the waste is disposed. The whole issue of Environmental Quality, then, should be broached.
3. All MSEs should be encouraged selectively. We need to eliminate involvement in Hospital Waste. Such waste needs serious supervision that MSEs cannot handle because they are not capable of regulating or protecting. MSEs should do what they can to eliminate recyclables of Hospital Waste so that there is no temptation.
4. We have to acknowledge that this is the scavengers' livelihood and try to make it safe for them. Let them go through SW, but in a protected/monitored environment. Scavengers are exploited by dealers they sell to because they are not recognised as entities.
5. Providing for scavengers is a difficult job, because they could then claim that they are municipal employees, which is an additional, unwanted problem.

Group 4

Enabling MSEs in MSWM to obtain Investment Capital

- Access to credit - MSEs are usually small and inexperienced in financial matters. As a result, it is difficult for them to obtain financing from formal lending institutions, i.e. banks.
- Financial Management Training for MSEs - Training of the MSE in financial management issues is therefore a necessity to enable them to secure loans and have access to credit.
- Influence of the policies of external funding agencies on MSE activities - Excessive dependency on funding agencies as a source of financing often means that MSE activities have to comply with their policies and procedures, thereby limiting their activities.
- Policies of local governments - Acceptance of MSEs often depends very much on local government policies and the attitude of municipal governments to them. The priorities of the political system play a large role.
- Mobilisation of the local community and resources - In order to circumvent the lack of funding mechanisms the use of local resources is critical. Tapping into existing local resources instead of setting up new enterprises should be done whenever possible. An example is the EXNORA project where local businesses have provided equipment. Transport sectors are already in place in most localities. How can these already existing resources be put to use in SWM?

- Legal status - The regulatory framework can often restrict the formation of MSEs. This varies from place to place but having a legal cover is undoubtedly helpful. Formalisation and affiliation to an association is helpful to the long-term survival of the MSE.

Obtaining Cost Recovery for MSEs to meet Cash Flow Requirements

- Cost assessment & Market analysis - Cost and profit analyses should be an integral part of MSE formation. A MSE should be able to predict its costs and perform a market analysis in order to plan for a long-term existence (e.g. how many households will be served, how much will maintenance of equipment cost, etc.).
- Sales credit for MSEs involved in recycling - Dealers often buy the separated garbage on a credit basis with payback periods of up to 90 days. This causes serious cash flow problems for the MSEs who often resort to moneylenders to cover their operating costs.
- Beneficiaries defaulting in payments - Again, this causes cash flow problems for the MSEs.
- Fluctuation in prices due to external factors - Seasonal weather variations and economic trends affect cost recovery and cash flow and sales. Collection, as well as recycling activities, are thus affected. (During rainy seasons, waste such as paper products become waterlogged and useless for recycling, transportation costs increase when certain fruits are in season because the waste is heavier, etc.)
- Productivity - There are two sides to this issue: Many MSEs hire workers on a daily basis to avoid paying insurance. This increases productivity but provides no job security for the workers.

Obtaining Public Cooperation with Services and Cost Recovery Activities of MSEs in MSWM

- Awareness building
- Reliability of service
- Political support from leaders in the community can be extremely helpful to MSEs
- Need satisfaction
- Defining responsibilities of all involved stakeholders - To guarantee public cooperation each party should be aware of its role. It is necessary to identify the right people to work with in each neighbourhood.
- Credibility of whole project

Replication of Pilot MSEs

It is very difficult to replicate projects even in the same city. Each area is unique but there are certain elements that can be used as guidelines. Another problem is that in a pilot a lot of resources and attention are provided to ensure the success of the project. This is not always available on a larger scale.

- Similar socio-economic conditions
- Capitalising on similar social and physical infrastructure - This includes the mobilisation of community leaders and available resources.
- Promoting through the media of results and processes of successful pilot processes - The media must be used to promote schemes and creating acceptance for SWM initiatives.

- Soliciting commitment from concerned local governments and organisations - Creating institutional acceptance is vital in order to facilitate the procurement of operating licences, land, etc. It is also important to create partnerships with similar MSE schemes in neighbouring regions to provide reciprocal support and encourage information exchange.
- Maintain appropriate scale - Growth has to be appropriately staged because strength often lies in maintaining an appropriate scale.
- Provide leadership

Additional Questions/Issues

1. There is usually friction between micro and macro enterprises. The interface between them has to be formalised in order to avoid exploitation of the micro enterprises.
2. How do we influence the development of the regulatory framework concerning MSEs?

Annex 7: Reports of Working Groups on Recommended Solutions

Group 1:

Recommendations	Responsible Parties
Changes in Bye-Laws and National Policy	
■ Recognition of MSEs as an integral party in MSWM	Head of State, Ministers, Ethnic and religious leaders
■ Environmental and health impacts, decentralisation and privatisation - include MSEs as partners of municipalities	Ministers, Parliament
■ Include Bye-Laws/regulations on privatisation with MSEs as partners - (i) the right to charge fees for service provision, (ii) terms of contract with MSEs and (iii) monitoring system concerning performance of MSEs	Local government
Finance	
■ Support for studies (pre-feasibility and feasibility) and investment	Supporting institutions, banks
■ Cost recovery of operational cost	Beneficiaries
Contracts	
■ Service contracts	MSEs and Municipalities
Ways to help MSEs	
■ Public messages	National political leaders
■ Media campaigns	Media, Local government
■ Mobilisation	Schools, NGOs, Associations
■ Workshops/meetings (towards participation/consultation)	MSEs, clients and local officials
Control of MSEs in performance/pricing	
■ Publication of agreed rates which precludes progressive increases in future	Local government based on Bye-Law, Media
Training and Technical Assistance	
■ Management training on good business practices supported with appropriate materials such as: manuals, audio-visual materials and multimedia facilities	ESAs, Business Associations (Chambers of Commerce)
■ Sensitisation/policy seminars for decision makers	NGOs, consulting firms (local)
Scaling-Up	
■ Coverage by MSEs is not necessary for entire city. Their involvement should be site specific and be considered as complementary to city services	Local government, Citizens
Information Exchange	
■ Seminars	Appropriate Ministry (local government, health, environment, housing, public works)
■ Forming associations of MSEs	
■ Involvement with the Chambers of Commerce	
■ Newsletters	
■ Computer databases (e.g. WASTENET)	
■ Documentation of best practices in MSWM	ESAs
Grab Bag Questions	
■ What if MSEs could operate landfills, composting operations, small-scale recycling plants?	
■ What if MSEs being engaged in other ventures like gardening, landscaping and other possible activities where compost is useful?	

Group 2

Recommendations	Responsible Parties
Changes in Bye-Laws and National Policy	
■ Need for a national policy; often bye-laws do not refer to micro and private enterprises. This therefore needs to be specifically promoted by national guidelines.	National government
■ The legal system for government contracting is often a constraint for MSEs involvement, e.g. time limit, contracts are often limited to a one year period.	Municipality
■ Often the legal system is not sufficient, e.g. Latin America micro enterprises are growing better when they are not favoured by the law. One could therefore conclude that political will is more important than the legal framework.	Local government
■ The existing laws are often too detailed regarding rates and terms, they need to decentralise the decision on implementation to the local governments	National government
Finance	
■ Guarantee funds should be provided so that local institutions are able to give credit to M-E without collateral.	External Support Agency (ESA)
■ Tax exemption.	
■ Support or help to build financial intermediaries which operate according to market connotations/principles (soft loans dry up; not sustainable). Key problem is access to existing facilities to be promoted through information, guarantee funds, social collateral, appropriate eligibility criteria.	National government Micro finance institutions, donor agency groups, banks, NGOs.
Contracts and Cost Recovery	
■ The system has to be adjustable to the real cost of service pervasion (this is easier to be done with direct cost recovery as opposed to indirect).	
■ Need to create a market in order to allow competing service providers to determine real cost and price for this service area and task must be broken down to appropriate manageable size for MSEs (inter zone comparison of cost and performance is possible).	
■ Disadvantages of indirect revenue collection by municipality: cost of collection is high, late payment of charges, people do not support the system, indirect collection is like a tax which is appropriate for public goods, it is not really a fee for services.	
■ When the MEs collect they have better contact with people.	
Public Cooperation	
■ Improve service regularity and quality.	Local governments
■ Convince the public that waste management is also their responsibility.	
■ Develop more efficient collection recovery systems.	
■ Make sure the service is responsive to the user by decentralising and privatising but increasing public responsibility for regulation and public education.	

Recommendations	Responsible Parties
Protection against Excessive Pricing ■ Determine the economic real price for services (improved cost analysis and be sure that households do not pay more than large enterprises). ■ Apply cross subsidy, and progressive fees to ensure equity of service to low income areas. ■ Ensure transparency of cost information to the user.	
Protection of MSEs against Off-shore Dumping of Recyclables ■ To provide physical incentives for recycled goods or at least avoid physical disincentives (taxes). ■ To provide information to entrepreneurs about the economic potential of recycled materials. ■ Government regulations to encourage/reward recycling and penalise disposal of valuable materials. ■ Government is a good market for recyclable paper. ■ The control of off shore dumping is difficult when a limited number of traders have oligarchy on the domestic market.	
Protection against Political Interventions ■ Link user community to supplier to protect them against it. ■ Legal framework on privatisation can protect the sanctity of contracts	
Technical Assistance ■ Much technical assistance is needed for management skill, technical capacity and health conditions on the job. ■ Encouraging exchanging of experiences locally and internationally.	NGOs, Municipalities, Donors, Training Centres
Scaling-Up ■ City wide MSWM strategy is precondition for effective scaling up of ME involvement. This strategy should include specifically ways of teaching low-income neighbourhoods. ■ Political commitment to the strategy including MSEs is essential, promoting MSWM strategy is a major objective of the UMP collaborative programme. ■ Efforts to transform state mechanism should include decentralisation e.g. for waste management.	
Information Exchange ■ Local media play an essential information dissemination. ■ Ways of capturing relevant information and experiences. ■ Build and expand existing information networks.	
■ Working conditions in the enterprises. ■ Consider the transformation of MSEs to larger forms of enterprises. ■ Using international terms for the concepts used. ■ Appropriate technologies to be used. ■ The interfacing of activities of MSEs with the secondary collection systems.	

Group 3

Recommendations	Responsible Parties
Changes in Bye-Laws and National Policies	
■ Existing laws are sufficient in most cases but not implemented - Public pressure to implement (Tanzania, Senegal, Ghana and the LAC region where existing laws were used for legitimising MSEs)	Municipal authorities Central government, NGOs
Finance	
■ Create opportunities for saving - Grameen bank in Bangladesh, post offices in Singapore	Municipal authorities
■ Structuring range of financial institutions for providing capital out of local savings	Central government, NGOs
Contracts	
■ Service contracts and franchising according to local realities ■ Providing for arbitration clause for easy enforcement and resolution of disputes ■ In the case of franchising, providing for standardised agreements between ultimate provider and service receiver, with enforceable arbitration clauses	All stakeholders
Public Cooperation	
■ Public cooperation is better when MSEs are initiated by community groups ■ Fines for complaints ■ Awareness campaigns ■ Ensuring the delivery of proper service by MSEs which would result in voluntary compliance	Local government and Citizens
Overall framework to be designed by municipalities, taking into account that it is a public service and interest of MSEs, should be balanced with that of the capacity of households to pay.	Municipalities
■ Access to landfills to MSEs on pay as you use basis ■ Government should be in the business of arranging and supervising rather than providing services ■ MSEs, if given a franchise for an area, should pay a fixed cost for disposal ■ Municipalities should be responsible and manage landfill sites ■ Products' standards should be based on local reality, so that recycling becomes economically viable taking into account the market for recycled products is for those who cannot afford new products ■ Transfer of technology should be encouraged ■ The culture of segregation and recycling to protect environment should be developed and where feasible made compulsory ■ Education on how to manage waste and segregation in households should be provided	

Recommendations	Responsible Parties
■ Motivation for segregation can be provided e.g. Mokattam where lower charges are collected if households segregate waste ■ Factory should provide for recycling ■ NGOs should play a role in converting scavengers into recyclers	
■ Contracting documents between MSEs and municipal authorities ■ Bidding documents of multi-lateral funding agencies such as the World Bank should be available to all. ■ If MSEs are community initiated, they have greater immunity from political intervention ■ MSEs should ensure quality of service and ensure environmental safeguards ■ Indonesian example of public recognition of rag-pickers by the president is note worthy ■ Indian example of EXNORA, rag-pickers rehabilitated as "street beautifiers" on regular employment and regular salary ■ Arbitration clause in contracting agreements to provide legal safeguards	
Technical Assistance ■ Training in waste handling and environmental issue e.g. development of training kits in Cairo ■ NGOs role in exchange of information, study tours and workshops for MSEs service providers	
Scaling-Up ■ Duplication and not scaling-up should be the priority e.g. Alexandria, and EXNORA	
Networking ■ SKAT and UMP regional office should take a leading role in dissemination of information and cross-linking with other networks ■ Feedback and moving towards global networking ■ UMP Homepage on Internet with a specific directory on MSEs in MSWM ■ Connection with news media and municipalities through the Internet	
■ Legitimising role of MSEs ■ Role of NGOs, municipalities and MSEs and relationships needs to be defined ■ Shift in thinking on the role of MSEs in delivery of services ■ Recognise the supporting role of NGOs ■ What is the UMP going to do next	

Group 4

Recommendations	Responsible Parties
Change in bye-laws & national policy	
■ Pressure Groups	Concerned citizens/
■ Collect/review/identify existing regulations	Agencies/
■ Discuss/inform/educate decision makers	NGOs
■ Laws & regulations for SW separation at source	
Finance:	
■ Facilitate access to credit (especially for women)	NGOs/
■ Provide seed capital in conjunction with training in financial management	Coalitions/ Concerned Agencies/ etc.
Service Agreements:	
■ Combination of both contracts & franchise	Municipalities/NGOs/ MSEs/
■ Service guidelines	Beneficiaries/
■ Regulations to protect workers rights "unionise	Municipal Agencies
Cost Recovery:	
■ Legitimise & Formalise micro-enterprises	Municipalities
■ Municipal support & help in rate collection	
■ Role of opinion leaders in supporting MSEs	
Protection of Households from Excessive Pricing:	
■ Participation of community in fixing tariffs	Communities/MSEs
■ Accountability between MSEs & community	
■ Further research & transparency	
Offshore dumping of recyclables & developing market demand of recyclables:	
■ National governments to take a stance on import of waste materials	National Governments
■ Market studies & coordination between MSEs	
■ Set up financial market for recyclables	MSEs
Protection of MSEs from political intervention & loss of contracts:	
■ NGOs/pressure groups to protect and help MSEs	
■ Trade Unions	
■ Support of mass media	
Technical Assistance & Training Needs:	
■ Training in financial & administrative management	Educational Institutions/ Universities/
■ Market Orientation	Specialised agencies/
■ Impact of ME activities on the environment	private enterprises/NGOs
■ Health and Hygiene Training	
■ Training on government regulations on social security, licensing, taxes, etc.	
Setting-Up of MSEs:	
■ "Small is Beautiful". Consortium of MSEs is better	MSEs
■ Dissemination & Information sharing	
■ Leadership (among the MSEs themselves)	
Information Exchange:	
■ Affiliate MSEs to UMP	UMP
■ Identify new needs for information exchange among MSEs	NGOs
■ Use UMP channels	UMP
■ South - South exchange of programme and visits	