



Differing interpretations of community participation in waste management in Bamako and Bangalore: some methodological considerations

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SUMMARY: *This paper contrasts two different approaches to community participation in developing more effective solid waste collection and management, illustrated by case studies from Bamako (where community participation was the objective) and Bangalore (where community participation was an instrument). A close look reveals that the two projects applied different methods despite using the same terminology. The achievements and problems faced by both case studies are discussed, along with a general discussion of how community-based schemes can contribute to more effective municipal solid waste management systems. It stresses how case studies can bring important general lessons but, for any city, these need to be applied within a strong understanding of local context.*

I. INTRODUCTION

NEW VIEWS ON waste management are taking shape based on experience with the environmental, socioeconomic and institutional ramifications of conventional methods of handling waste. These new views recognize that waste collection can only be improved through making better use of the resources of residents and small and micro-enterprises that are operating in their own neighbourhood communities. It is expected that such community-based services will not only fill the gap in service provision left by overburdened municipal authorities but will even become accepted as an integral component of the whole municipal waste management system.

The Urban Waste Expertise Programme (UWEP) is a strong advocate of these views. Initiated in the 1990s by a Dutch non-profit organization, the programme is now in its second phase and is implemented by a consortium of five organizations, four of which are based in the South.⁽¹⁾

Basic to the UWEP programme is the concept of Integrated Sustainable Waste Management (ISWM).⁽²⁾ This has three major dimensions:

- the stakeholders involved in waste management;
- the practical and technical elements of the waste system; and
- the aspects of the local context that should be taken into account when assessing and planning a waste management system.⁽³⁾

To be more precise about the dimensions of ISWM, the list of potential stakeholders ranges from informal sector waste pickers to municipal departments, whilst waste system elements include all elements from collection to final disposal of waste, as well as re-use, recycling and

composting. The last dimension refers to the different aspects of a waste management system, such as the environmental, political/legal, institutional, sociocultural, financial/economic and the technical performance aspects. When confronted with a particular problem in the operation of a waste management system, it is always advisable to look at the influence of all three dimensions of ISWM, whilst an analysis of the actual waste issues and problems will make clear which are the crucial stakeholders, priority system elements and most relevant aspects in that particular situation.

To implement the ISWM concept, UWEP's mode of operation is to have a cluster of pilot projects in a selected city, each of which focuses on a specific waste issue that is of particular concern to local project partners. There have been clusters of pilot projects in Bamako (Mali), Bangalore (India), Batangas (Philippines) and La Ceiba (Honduras). Several pilot projects focused on community participation in waste collection.

The present paper has the following structure. First, two different approaches to community participation are presented. The pilot projects are then described as examples of these two approaches, with Bangalore representing the "community participation as an instrument" approach and Bamako the "community participation as an objective" approach. The paper then analyzes the project objectives and the methods of awareness raising and organizing, pointing out both the similarities and the differences. The discussion then considers the conditions under which one or other approach is more appropriate. Sustainability, the sociopolitical context and the possibility of joint project development by NGOs are the factors considered.

II. COMMUNITY PARTICIPATION AS AN INSTRUMENT AND AS AN OBJECTIVE OF URBAN SERVICE PROVISION

BACKGROUND TO THIS paper is the observation that there appears to be a consensus about involving so-called "communities" in waste management, as many project documents mention the need for community participation. Upon closer look, however, the ideas about community participation vary greatly.

The different intentions regarding community participation in waste management refer to a major distinction, which has both practical and policy implications. The distinction refers to community participation as an instrument to make waste management more efficient, and community participation as an objective in which waste management is an important instrument to achieve social development.

For many years, professionals and governments have considered "community participation" in different ways.⁽⁴⁾ To some, people's involvement in the development of urban services is only a way of ensuring that people are more inclined to accept predetermined policies and do the things expected of them to make the services operate adequately, such as paying monthly service charges. To others, people's involvement in service development is, in addition, a way of strengthening the capacities of neighbourhood residents and their social organizations by providing opportunities for informed decision making and carrying out civic responsibilities. The outcome of these social processes is the desired urban service with a broad social basis of agreement. This distinction between

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The Urban Waste Expertise Programme is an eight-year research and pilot project programme (1995-2003) on urban waste in the South. The UWEP programme is coordinated by WASTE and funded by the Netherlands Agency for International Cooperation (DGIS), Ministry of Foreign Affairs.

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1. WASTE (1994), "Urban Waste Expertise Programme": *A Programme Enabling Urban Communities and Micro-entrepreneurs to Improve their Environment and to Increase Employment: Programme Proposal*; also WASTE/SURCO, UWEP PLUS (2000), "Taking integrated sustainable waste management planning to scale. Funding proposal".

2. WASTE/ UWEP (2001), "Integrated sustainable waste management: a set of five tools for decision makers; experiences from the urban waste expertise programme (1995-2001)", WASTE, Gouda, The Netherlands.

3. See reference 2, page 12.

4. See for example, Pearse, A and M Stiefel (editors) (1979), *Enquiring into Participation*, UNRISD, Geneva referred to in Driskell, David, Kanchan Bannerjee and Louise Chawla (2001), "Rhetoric, reality and resilience: overcoming obstacles to young people's participation in development" in *Environment&Urbanization* Vol 13, No 1, April, pages 77-89.

5. For example, the MANAGE dissemination project states that some donors, governments and experts use the community management concept "...for the supposed participatory and democratic character of community management, others because they consider it to be an effective solution for problems related to the operation and maintenance of water supply schemes." This project also observes that "...a wide variety of management options for improved community water supply can be distinguished." See <http://www.irc.nl/projects/manage/index.html>

6. See Hordijk, Michaela (1999), "A dream of green and water: community-based formulation of a Local Agenda 21 in peri-urban Lima" in *Environment&Urbanization* Vol 11, No 2, October, pages 11-29.

7. Moninga, Laura (2000), "Community participation in solid waste management: factors favouring the sustainability of community participation; a literature review", UWEP Occasional Paper, WASTE, Gouda, The Netherlands; also, see reference 2, page 12; and reference 6.

community participation as an objective and as an instrument in developing urban services is also seen in water supply and sanitation projects and in neighbourhood improvement programmes.⁽⁵⁾

In abstract terms, the distinction between these theoretical extremes is clear, but in practice there are intermediate forms of eliciting participation, as residents, leaders and project staff adjust to each other and to the circumstances in which the project is carried out. This refers to the methods of awareness raising and decision making (the subject of this article), as well as to the organization of waste collection itself, in which households, private enterprises and local authorities are all responsible actors.

The question is, what are the implications of these different intentions for projects that aim to improve waste services through greater involvement of residents, as users of urban services? Do they affect the approach and methods applied? What are the implications in terms of sustainability, flexibility in timing and funding, and replication?⁽⁶⁾ And what can be said about the context within which such projects are implemented?

A few words must be said about the concept of "community".⁽⁷⁾ The term "community" is rather ambiguous as it can refer to:

- a neighbourhood with geographical boundaries, whose residents share common problems;
- an institutional unit in a government system; or
- a social community, whose members identify with each other because of social or cultural ties among them.

In practice, we prefer to use the term "neighbourhood community", as some neighbourhoods have certain characteristic features of the other two types of community. The term "neighbourhood community" also acknowledges the social heterogeneity of the residents and the fact that social cohesion is a social quality to be achieved rather than an automatic feature of the residents' social organization.

III. THE UWEP PILOT PROJECTS

THE UWEP STRATEGY was to have several related pilot projects in the same area of a city, each addressing a specific problem in waste management, as identified by local project partners. In Bangalore, India, the pilot projects were:

- community-based solid waste management in Nagapura, Ward 14;
- safe management of health care waste in Malleswaram, Ward 7; and
- strengthening the Swabhimana platform of civic organizations.

In Bamako, Mali, the pilot projects concerned:

- participation of the population in waste activities;
- development of appropriate technology for garbage collection; and
- development of a community-based facility for recycling and treatment of different types of wastes.

The projects were designed by local partner organizations in consultation with stakeholders in waste management, applying the general ISWM guidelines developed by UWEP. The pilot projects reflect, therefore, the ideas and methodology of the project partners. The project partners were the Centre for Environment Education (CEE) in Bangalore and the Cabinet d'Etudes Keita (CEK) in Bamako.

The CEE is a national institute with local offices (one of which is in Bangalore), whose aim is to increase environmental awareness through

special programmes and educational materials. The CEE is a member of Swabhimana, a local platform of organizations that lobby the authorities to increase equity and effectiveness of service provision.⁽⁸⁾ The CEK is a consultancy office in Bamako, whose mission is to enhance the capacity for development through education and training of children and adults, by creating the right opportunities for learning.

This paper, based on the final project reports, pays particular attention to the manner in which the population is involved in the project phases, the methods for awareness raising and capacity building, and the contacts with the municipal authorities.⁽⁹⁾ Government policies on decentralization and waste service provision are also examined as they established the context in which this community-based service could be implemented.

IV. CASE STUDY OF COMMUNITY-BASED SOLID WASTE MANAGEMENT IN NAGAPURA, WARD 14, BANGALORE, INDIA (1999-2001)

a. Context

IN BANGALORE (5 MILLION inhabitants), the city council is responsible for waste collection and disposal. Recent central government legislation demands that, as of 1 January 2000, municipal authorities provide door-to-door collection services in every neighbourhood and that they utilize environmentally friendly waste treatment methods such as composting of organic wastes.

Decentralization legislation further requires that all wards, the smallest political/administrative units in a municipality, have elected ward committees. They are expected to closely cooperate with the elected ward councillor, who represents them on the city council. Elections to the city council are held every five years, in which residents of each ward elect their councillor through a process of voting.

The Bangalore city council is interested in supporting private and NGO initiatives as a way of expanding its own waste services throughout the city, as demanded by law. However, the degree of support varies with the appointed city commissioner, who is in office for two to three years. The UWEP pilot project is seen, therefore, as a model for door-to-door waste collection, in which the Bangalore city council and residents of a neighbourhood cooperate. However, despite the law, ward committees have not yet been elected in any of the 100 wards in Bangalore.

Nagapura Ward (60,000 residents) is a middle-income area with a mix of residential, commercial and institutional buildings. Several private entrepreneurs carry out waste collection, each in their own sector of the ward, while a group of residents (a waste management committee) is in charge of waste collection in one sector comprising 400 households. The ward councillor is greatly interested in improving waste collection as it will give him political visibility, and at least one of the waste entrepreneurs also has political ambitions. The CEE has also been involved in small waste-composting projects in Nagapura Ward since 1994. However, there is no coordination between all these different waste activities in the ward.

The UWEP pilot project is in a sector comprising 3,000 households, where the city council has installed large street containers in which residents dump their garbage. When the container is full, garbage is thrown on the ground, to the dismay of many people.

8. Centre for Environment Education (1992/1993), "Annual Report".

9. Iyer, Anjana with D G Poornima and Manjula N Rao (2001), "Community participation in waste management; experiences in a pilot project in Bangalore, India", UWEP Case Study, WASTE, Gouda, The Netherlands; also Traore, Dionkounda, Modibo Keita and Bani Sacko (2000), "L'implication des populations defavorisées dans les actions d'assainissement dans le district the Bamako: capitalisation d'une experience de recherche-action en commune IV", UWEP Working Document 13, WASTE, Gouda, The Netherlands; and the English version (translated by Maria S Muller) (2002), "Involving the population in waste management in Bamako: the experience of an action-research project in commune IV", UWEP Working Document 13.

10. Final Report PPS Bangalore (2001), Chapter 2: "Community-based SWM project at ward 14, Nagapura" in *Urban Waste Expertise Programme, Final Report*, Vol 2, WASTE, Gouda, The Netherlands.

11. Anand, P B (1999), "Waste management in Madras revisited" in *Environment&Urbanization* Vol 11, No 2, October, pages 161-176.

12. See reference 10.

b. Project objectives

CEE proposed the project objectives, in consultation with Bangalore city council and other organizations. The project would aim to establish a solid waste management system in the whole Nagapura Ward, through community involvement in cooperation with the city authorities. The system would include waste collection, storage and disposal of different types of solid waste in an environmentally friendly manner.⁽¹⁰⁾ It also expected to achieve coordination among the existing waste enterprises in the ward.

A group of about 20 residents (mainly women) endorsed these objectives at a meeting. They had been invited by CEE, having been recognized as proactive in the ward through various social and cultural activities. They were considered to be in touch with the requirements and ideas of the ward's residents.

c. The envisaged waste system in Nagapura Ward

The central components of the envisaged integrated solid waste system were the collection of separated waste and the composting of organic waste. The project team started a new composting pit and, at the same time, tried to establish a commercially viable link with a private composting enterprise. The Civic Exnora model was adopted, whereby waste collectors are engaged by a waste management committee to collect the household garbage.⁽¹¹⁾

To initiate a collection service based on waste separation at source, it was necessary that:

- the Bangalore city council remove the collective street garbage containers;
- waste collectors be trained for door-to-door collection and the separation of waste; and
- residents be motivated to store and hand over separated household garbage.

d. Project strategy

Project strategies included:

- the education and training of waste generators and service providers;
- the identification of a landfill site for safe disposal of waste collected from the ward; and
- the involvement of citizens as well as the local ward councilor in monitoring the new waste collection service.⁽¹²⁾

The CEE decided that it would both help the residents of one sector to start a waste collection service and also assist service providers in other sectors to increase community participation, improving efficiency and ultimately forging a good link to transportation and disposal. During the limited time span of the pilot project, the first focus has been more successful than the second.

e. Defining participation

For the purposes of this community-based waste service, the CEE defined participation as:

- the daily action of handing over separated waste at a particular time to the waste collector; and

- the payment of service charges, i.e. a monthly payment based upon what the community is able and willing to pay.
In addition, it can be:
- participation in a committee that plans and manages the programme in its entirety;
- a resident or a commercial establishment providing space to park vehicles or make financial contributions for equipment and carts; and
- membership of a monitoring committee to monitor the service provided by private operators or the municipality (civic wardens).

f. Project activities

One of the first project activities was a baseline survey to estimate the number of waste generators by category. This was conducted by university students.

Awareness raising has been a major activity and a lot of time and resources have been spent in sensitizing residents to the proposed scheme and in explaining the methods of waste segregation. Environmental science students were engaged to conduct several rounds of motivating for the new service and for waste separation; also to enrol waste management committee members, identify residents as civic wardens and monitor waste services. The students engaged for the awareness raising were not necessarily ward residents.

Door-to-door contact with every household was the main method used in awareness raising, backed up by group discussions in several neighbourhoods. Printed information material was also used in these contacts. Although very time intensive, this method proved to be more effective than just the distribution of printed materials, as the city council usually does.

The CEE approached restaurant and hotel owners through personal contacts, meetings and workshops, with the aim of linking them to a separate waste collection system. After many months of advocacy, the hotel owners set up a separate system on a user fee basis, urged on by the legal obligation not to mix waste from commercial establishments with household wastes.

School students were targeted to sensitize them to environmental issues. The CEE used its own training materials for teacher training on waste management and for teaching school students through lectures, field visits and special events.

Other activities carried out by the CEE to create awareness about a clean environment and the careful handling of garbage were organizing street theatre (targeting the general public), spreading messages during public events, and holding seminars and workshops in community halls attached to local temples.

Finally, the CEE has trained waste collectors in separation at source, safety measures, and attitude and behaviour towards citizens. Both self-employed waste collectors and municipal workers were trained.

g. Local organization and relations with municipal authority

Project staff and students have identified residents (mainly women) interested in becoming members of the waste management committee. Their tasks include:

- paying monthly salaries to waste collectors;

- replacing equipment (collection carts); and
- liaising with the city council for regular services.

A major project concern has been lobbying with the municipal authorities to get the street waste containers removed (so as to improve primary collection – see next paragraph) and to identify a suitable site for a landfill (so as to improve final disposal). The project achieved great success with the removal of the street containers but was unable to overcome obstacles posed by political and business interests in earmarking a site for a landfill. The project staff, together with the ward councillor and members of the waste management committee, held frequent meetings with the city council officials.

h. Waste service achievements

The major outcome of the pilot project is that a new door-to-door service has been established in several sectors of Nagapura Ward, which is managed by the waste management committee. The new service entails waste collectors transporting organic waste to the compost pits in the neighbourhood or handing it over directly to the council trucks. The waste collectors retrieve recyclable dry waste or, again, hand it over directly to the trucks. This system ensures that there is a fixed time to hand over waste rather than depositing it in and around the street containers whenever residents find it convenient to do so, sometimes just after the city trucks have left.

The degree of participation of households in the new collection scheme is rising, especially after each round of awareness raising. It is difficult to quantify the increase in participation but, on average, there is an increase of about 15 per cent in the number of participating households after each round of awareness raising. This means that more households are handing over separated waste and that more households are paying the waste management committee for waste collection. As a result, the streets are looking cleaner, with less garbage being thrown out indiscriminately. It should be recognized that the residents are exhibiting a considerable change in behaviour. From a system whereby they took their garbage to street containers and did not have to pay, they changed to a door-to-door collection service which demands their daily efforts in waste storage and separation, and the payment of monthly service charges.

The continued interaction between the CEE, the waste management committee and Bangalore city council officials is another project achievement. The removal of street containers as the first step towards a door-to-door collection service, the separation of waste and composting is one example. Another example is the consultation by the city council of the CEE and the waste management committee about the location of transfer sites (where the waste collectors dispose of the sorted wastes).

Another project achievement is the identification of 300 civic wardens who monitor the waste services of Bangalore city council. The concept of civic wardens was discussed at several meetings with council officials over a one-year period. Civic wardens are similar to traffic wardens and tree wardens, i.e. it is a locally known concept and practice.

It is a new approach for Bangalore city council to recognize the role of residents in waste management. Seeing its advantages, it has requested UWEP project staff to apply their methods of community mobilization to the introduction of a door-to-door collection service to at least 3,000 households in the ward.

i. Problems

The first problem concerns the role of the waste management committee, whose involvement is limited because of time constraints. Waste management committee members are prepared to take responsibility for voluntary tasks which require a limited amount of time, either weekly or monthly. But the members are not able, without NGO support, to involve themselves in the entire range of management issues on a daily basis, such as solving labour problems, (absenteeism, strikes for higher pay, turnover), operational issues (monitoring the waste dumped in the compost pits and regular turning during the composting process) and marketing of compost. Neither is the waste management committee able, without NGO support, to motivate people to adhere to the waste collection schedules.

The second problem concerns the fact that the initiatives of private entrepreneurs and social organizations in Nagapura Ward stem from a variety of motivations, such as promoting a clean environment, creating employment for waste pickers, establishing an efficient service, earning good profits or gaining political visibility. This results, for example, in wet and dry garbage being collected separately in one neighbourhood whilst all garbage is put together in the next neighbourhood. Payment conditions and degree of supervision of waste collectors also vary. Therefore, the joint use of facilities such as compost pits or transfer stations by different groups of waste collectors leads to conflict and requires careful discussion and coordination. Furthermore, different arrangements exist for transportation, temporary storage and final removal of waste. This leads to the question of how to link up the variety of neighbourhood-based primary services to the city's waste system. All waste services could become more effective and efficient if the Nagapura Ward neighbourhoods supplied their garbage to the city trucks according to uniform standards and procedures, e.g. by adhering to fixed times and supplying the collected garbage in the required manner. Efforts to create more coordination and uniformity in the ward's waste collection services are hampered, however, by underlying motives of political competition, whereby some politically well-connected entrepreneurs see more benefit in getting municipal services only for their own enterprise rather than for all waste enterprises in the neighbourhood. The pilot project has not yet found a suitable approach to coordinating the waste entrepreneurs and organizations in the ward.

V. PILOT PROJECT ON PARTICIPATION BY THE POPULATION IN WASTE ACTIVITIES IN COMMUNE IV IN BAMAKO, MALI (1997-2001)**a. Context**

BAMAKO, CAPITAL OF Mali, is an urban district (1 million inhabitants) consisting of six municipalities or "communes". Until recently, responsibility for waste collection was divided between several authorities, which resulted in ineffective management. The authorities allowed micro- and small enterprises (MSEs) to carry out waste collection but had no clear ideas about the roles of these enterprises as partners in waste management. Nor did they consider community organizations and NGOs as

possible partners. The institutional context changed in 1998 with the formalization of the decentralized government structure in Bamako. Since then, municipal authorities not only have full control over service provision but are also required to obtain support for their policies and activities from community leaders and civic organizations. The authorities still do not provide primary waste collection in the residential areas.

Commune IV is one of the older municipalities, whose population (200,000) varies in occupation, social origin and income level. The commune is divided into eight "quarters", each of which has its own formal leadership structure and community organizations. Since the early 1990s, the waste MSEs were the main actors in waste management in Commune IV. In each quarter, one or two MSEs were providing waste collection services. The MSEs took the garbage to transfer sites at the edge of the commune, from where the municipality was supposed to transport it for final disposal. The MSEs experienced financial difficulties mainly because they did not receive sufficient support from the population. In fact, not enough households subscribed to their service and households were often late in paying their dues. The MSEs established a coordinating committee (CPAC) in 1993, whose members were the waste MSEs in the whole commune, the community leaders and one concerned NGO. CPAC had been aware of the consultancy office CEK for several years, having sometimes used its advisory services.

b. Project objectives

Community leaders, MSEs and the local authority agreed on project objectives through a series of workshops which were facilitated by CEK. Their general aim was to achieve a healthy, clean and peaceful community through waste management activities. In particular, they wanted the population to show an active interest in issues such as waste collection and the re-use of organic waste; and that community-based organizations focusing on waste activities be established and would act as partners of MSEs and the municipality in waste management matters.⁽¹³⁾

The project partners not only expected that more households would subscribe to the collection services of the MSEs but also that MSE officers and influential people in the community would learn the participatory methods of intervention that are applied by the project team.

c. Strategies

The project adopted action-research as its main approach and used the classical participatory assessment method (PRA or MARP: *Méthode Active de Recherche et de Planification Participative*).⁽¹⁴⁾ The action-research started from the waste management problems as identified by the population and their leaders. The research phase (jointly with the population) resulted in the population's decision to form waste management associations, one in each quarter, built up from the grassroots level. With this perspective, the project developed new strategies to increase awareness of waste issues, facilitate communication among the households and between the population, the MSEs and the local authority departments, and mobilize the population to participate in concrete activities. "Learning to act together" was a guiding principle in these strategies.

A strategic step was the composition of a project team consisting of five people, with respected status in their own quarter, and MSEs, under the

13. See reference 9, Traore et al. (English version).

14. See reference 9, Traore et al. (English version).

leadership of a professional. This composition ensured full and regular communication with important actors in the community. The team members received a small honorarium.

d. Focus on waste components

The project's central component was waste collection by the MSEs. To be effective and efficient, the MSEs required full and regular participation of households as well as reliable secondary collection by the local authority. Later, attention also focused on the monthly clean-up campaigns organized by the waste management associations and on the utilization of organic waste by peri-urban farmers. Awareness was raised on recycling of plastic and hazardous wastes.

e. Participation of the population: definition

The project team worked simultaneously to increase the capacities of the population to stimulate social development and improve the delivery of waste services. It considered a widely supported waste collection service as the first evidence that the population was now better informed and organized than before. The project team therefore decided that the practical aspects of waste management would form the content of its project activities, by focusing on waste collection and environmental cleanliness. For this reason, the project team defined community participation in practical terms as:

- subscribing to the MSE waste collection service;
- paying regular monthly service charges;
- participating in clean-up campaigns; and
- participating in monitoring the service performance of MSEs and the local authority.

f. Project planning

The project team undertook participatory assessment in each quarter. In this four-month diagnosis exercise, public inventories were made of the historical, social, economic, organizational and environmental characteristics of the waste situation in the quarters. This exercise of making a diagnosis was a major tool for raising awareness and involving local communities. The team reported the findings at a commune-wide feedback meeting.

After this meeting, the people were ready for more detailed project planning. Each quarter made its activity plans for information exchange, education and training, communication and mobilization, organization and coordination with partners in waste management.

g. Socioeconomic diversity

Several dimensions of socioeconomic diversity were identified:

- households with middle and very low incomes were living in the same streets. They had different priorities and capacities regarding participation and spending on waste facilities;
- there was a clear distinction between urban and peri-urban quarters. As the peri-urban farmers utilized organic waste, they were happy to receive household garbage, whilst the urban quarters wanted to get rid

of it. The peri-urban quarters also demanded a waste recycling and treatment centre in their area; and

- women had more practical knowledge about the environment than men.

The project team created opportunities to voice the different interests and priorities by first, starting a series of meetings always on street and block level, and from there on to the quarter level, both for information and education campaigns and activity planning; and second, always holding separate meetings for women, youth and older men before holding joint meetings.

h. Project activities: establishing waste management associations

The community-wide feedback meeting took the decision to set up a waste management association in each quarter, each covering between 20,000 and 50,000 residents. The project team and community leaders held many public meetings, resulting in waste management committees at several levels:

- street/block-level committees;
- sector-level committees;
- a quarter-level committee; and
- the executive committee for the quarter-wide association.

Women were the main leaders, being recognized as having a special interest in and capacities for environmental improvement.

This organizational structure, which included the whole population, was used for further activities such as awareness raising and education and mobilizing the population to join clean-up campaigns.

i. Project activities: local organizations and relations with municipal authority

The waste management associations strengthened their position vis-à-vis the other partners by taking part in discussions with the municipal authorities, the MSEs and local NGOs. At the same time, the MSEs achieved more influence with the authorities through political representation on the municipal council and through the demand for proper waste collection, expressed loudly by the population through the waste management associations.

The new relationships were expressed in a reconstituted coordinating committee (CPAC), of which both the MSEs (service providers) and the waste management associations (service users) are now members. Similarly, the municipality expressed commitment to a new protocol that defines the respective roles of the waste management associations, the MSEs and the authorities.

j. Project activities: awareness raising and education

Sessions on proper handling of waste were held with groups of neighbours. Topics included, for example, identifying specific waste problems in the street/block; cleaning and repairing soak pits (latrines) and garbage bins, which is an individual responsibility, and gutters, a responsibility of neighbours; and refraining from careless throwing out of waste water and garbage. This approach relied on social ties among people living in the

same area and strengthened mutual responsibility among neighbours.

At the quarter level, the waste management associations organized cultural events with traditional dance and music to spread waste and cleanliness messages.

Training was given to specific groups – for example, the committees of the waste management associations, councillors, and staff of municipal and district authorities – and ranged from composting techniques and integrated waste management to participatory methods in project planning and environmental awareness raising.

k. Achievements

By the end of the pilot project, the operation of waste services by MSEs had strengthened, as more households subscribed to their services and paid service charges regularly. Furthermore, waste management associations were functioning adequately in most quarters of Commune IV, although they still needed a lot of training and guidance. The municipal authority, for its part, is committed to making communication and coordination procedures operate in practice, while regarding MSEs and waste management associations as partners in waste management. In fact, it coordinates with them about the timing of secondary collection, about publicity and clean-up campaigns and about public works contracts.

Finally, this pilot project on community participation in waste management is taken as example by other municipalities, which seek to replicate it while adjusting to local socioeconomic, organizational and environmental conditions.

l. Problems

The low and irregular incomes of a substantial proportion of the population were constraints on the project. They mean that people can spend only a limited amount of private resources on community activities, from unpaid time and labour to contributions of tools and equipment. People also need access to microcredit for obtaining private waste facilities. The high construction costs of latrines and soak pits are beyond the means of most of them, unless they can pay in installments over months or years. For some households, the purchase of durable garbage bins is also a problem. Development agencies may be a source of funding.

Another difficulty has arisen with new NGOs starting their own waste and environmental sanitation projects in Commune IV. Having their own funding sources and strategies, and sometimes having political ambitions, these new organizations often avoid collaboration with CPAC, the MSEs and established waste management associations.

VI. SIMILARITIES AND DIFFERENCES BETWEEN THE PILOT PROJECTS

A STRAIGHTFORWARD COMPARISON between these two projects cannot be made because of differences in their contexts. India and Mali differ greatly in, among other things, economic, urban and institutional development, the average level of education and the intensity of NGO activity in all spheres of society. In India, moreover, waste issues have been high on the political and policy agenda for many years. In Mali, by

contrast, public and political interest in waste issues is relatively new. Despite this, we can point to some project-related similarities and differences.

a. Similarities between the pilot projects

- The general aim of local leaders and residents is to improve waste collection in the locality. They want to achieve better coordination between the activities of authorities, private sector enterprises and residents.
- The local development agencies engaged to facilitate improved waste management formulate the same practical definition of community participation in waste collection.
- Concrete collaboration between municipal authorities and local initiatives focuses on the allocation of sites for temporary waste disposal in the neighbourhood, and regular and efficient transport from this site.
- Personal political links between the neighbourhood community, local private enterprises and municipal authorities are an important factor in getting the desired actions from municipal authorities.
- Within the neighbourhood, it is difficult to achieve coordination between the local actors because of competing interests and different operational procedures, and links to government authorities.
- Continued back-up support for social and technical capacities will be needed in both projects.
- Government decentralization policies and the explicit allocation of waste management obligations to municipal authorities provided the favourable institutional context for improving coordination between the authorities, and neighbourhood and private sector organizations.

b. Differences between the pilot projects

The general and major difference between the two projects is that the development agency in Bangalore considers community participation as an instrument to get a financially and environmentally viable waste service going, whilst the development agency in Bamako considers community participation as an objective that is at least as important as improving the waste collection service. These project objectives determined the application of specific methods, within the general framework of community participation in waste management. On the one hand, the Bangalore project focuses on awareness raising and the education of individuals and of the public in general, so that they will cooperate with the services offered. Whilst on the other hand, the Bamako project applies awareness-raising methods in such a way that they serve two purposes, namely, education about waste issues, and strengthening social relationships on all organizational levels in the quarter so that community-based organizations can be created as partners in waste management.

Specific points illustrate this observation:

- In Bangalore, the development agency set up a project team of staff members without identified links to local organizations. In Bamako, the development agency assisted the community leaders in selecting project team members who represented the major waste actors in the quarters, especially the small private enterprises.
- Whilst the baseline study in Bangalore was only meant to get a certain amount of information, the participatory baseline study in Bamako was

used as a major tool to involve and create real interest among leaders and residents as well as getting useful information.

- Whilst the major method of awareness raising in Bangalore was door-to-door contact with individual households, stressing individual actions, the Bamako team used group discussions in small groups of neighbouring households, whereby they highlighted both individual and collective responsibilities among neighbours.
- Whilst in Bangalore, members of the waste management committee were identified by project staff, in Bamako, the waste management committees in each quarter were elected by the population through a process that ensured deep social roots in the community.

VII. DISCUSSION

THE REALIZED OUTCOME of both projects is that residents increased their cooperation with the provided waste services. The Bamako project, with community development as its final objective, achieved in addition the emergence of a new organizational structure that now serves as a channel for educating, mobilizing and monitoring, and for identifying priorities for further improvement in environmental conditions.

When both community participation approaches apparently lead to establishing or strengthening a neighbourhood waste collection service, one may ask what is the advantage of applying one or other method. A discussion of sustainability may provide the answer. Sustainability in this case means that the project has improved the primary waste collection service, together with the conditions that will sustain the service after the end of the present level of project support. Examples in Africa and Asia of private and community initiatives in waste services have emerged only in the past two or three years.⁽¹⁵⁾ Their real effectiveness and sustainability, therefore, cannot yet be assessed. The Civic Exnora units in India form one notable exception. A recent study analyzes the experiences of the Civic Exnora units in Madras (India), first established there in 1989.⁽¹⁶⁾

a. Sustainability factors: Civic Exnora in Madras and the Quito recycling project

Characteristic features of Civic Exnora units are the establishment of a waste management committee by several residents; the employment of waste pickers to collect household garbage door to-door and transport it to nearby transfer stations; the payment of regular service charges by all residents to the committee; and serving on average about 200 households. Anand's study notes that the Civic Exnora units exist on average for 3.36 years, and lists the factors that are crucial for their continued existence. The main factors refer to back-up provisions for waste collection itself, such as a transfer station at a reasonable distance and having a well-functioning secondary collection system. Other crucial factors refer to the functioning of the Civic Exnora units themselves, such as a democratic leadership style for the committee; representativeness of committee members; the style of communication with residents; and financial transparency. The latter are "...keys to a successful functioning of Civic Exnora."⁽¹⁷⁾ Continued support from residents cannot be taken for granted, as exemplified by committee members' opinion in about half of the surveyed Civic Exnora units that there is insufficient cooperation by residents.

The importance of an open, democratic style of leadership by waste

15. UWEP case studies on community participation in waste management in Colombo (Sri Lanka), Metro Manila and Metro Cebu (Philippines), Karachi (Pakistan), Patan City (Nepal), Bamako (Mali), Dakar (Senegal), Ouagadougou (Burkina Faso) in Bulle, Sylvaine (1999), "Issues and results of community participation in urban environment", UWEP Working Document 11, ENDA/WASTE, Gouda, The Netherlands.

16. See reference 11.

17. See reference 11, page 176.

18. Hernandez, Orlando, Barbara Rawlins and Reva Schwartz (1999), "Voluntary recycling in Quito: factors associated with participation in a pilot programme" in *Environment&Urbanization* Vol 11, No 2 October, pages 145-159.

management committees is corroborated by a study of a recycling project in Quito, Ecuador.⁽¹⁸⁾ The project entailed separation of waste at source by households, the sale of recyclables and the use of the proceeds of this sale for community projects as decided by a community committee. After an initial high level of cooperation by households, the rate of separation at source dropped. The main cause was lack of information by the committee both on the money earned from the sales and on the way these funds were spent, which were, after all, generated by the community. Lack of information became a source of suspicion about the misuse of funds by a politicized committee and undermined the households' interest in the project.

A reliable secondary collection system, including the operation of a waste transfer station, is crucial for the sustainability of primary collection services. It requires a good deal of organization and coordination for the public and private partners to carry out their respective tasks in a reliable manner. One can imagine that a number of small and large enterprises and community groups engage in primary waste collection in adjacent neighbourhoods and that they all rely on the local authorities for secondary collection. This can be the reality when several Civic Exnora units, each covering about 200 households, are operating in a ward.

The waste transfer station is the focal point in the system, a visual sign of the extent to which the respective partners carry out their tasks. When a transfer station is always empty, or when it is always overflowing with garbage, then one has reason to ask what has gone wrong in the public-private partnership for the removal of waste. One may observe, for example, that when several enterprises or groups of waste collectors use the same transfer station, they share the responsibility for its operation and maintenance, including cleanliness. This requires that the enterprises and groups adhere to certain rules of operation, to be enforced by a community-based (or ward-based) authority. Similarly, the waste collectors and the local authorities have to agree on certain rules of operation, such as collection times at the waste transfer station, methods of secondary collection and informing each other in case of emergency (e.g. the breakdown of a collection vehicle, the overflow of the transfer station).

Furthermore, when several small enterprises of waste collectors are operating in a ward or residential area, they may want to organize a coordinating committee both to regulate their own working relationships (e.g. rules of competition) and to represent them in negotiations with the authorities. This was the case in the Bamako project analyzed in this article. Also, the waste MSEs in Dar es Salaam, Tanzania, have set up a city-wide association.⁽¹⁹⁾ In fact, the local authority may prefer to deal with one large, intermediate partner for negotiating the rules of operation of the primary and secondary services, with the intermediate partner being responsible for obtaining agreement from the small groups and enterprises. On the other hand, if the intermediate partner is strong and well organized, the local decision makers may consider it a threat to their authority.

From these experiences, we can conclude that a sustainable neighbourhood-based waste service requires a systematic back-up service by the authorities; a leadership and communication structure that is open and trustworthy to its own residents; and a capacity among a wide range of residents to organize themselves, exercise local supervision and control, and present the authorities with demands for appropriate back-up services.

19. One of the outcomes of the UNDP/UNCHS/ILO "Promoting Environmentally Sustainable Urban Development in Tanzania" was not only the rapid increase in the number of small community-based enterprises engaged in waste collection but also the formation of an association of waste CBOs in Dar es Salaam (information from ILO project officers Ms Saskia Bakker and Ms Alodia Ishengoma). See also Annex 8 "Supporting and Strengthening MSEs" in Haan, Hans Christiaan, Adrian Coad and Inge Lardinois (1998), *Municipal Solid Waste Management: Involving Micro- and Small Enterprises*, SDC, ISAT and UWEF.

b. Conditions for choosing one or other community participation approach

The next question is how to address the three sustainability factors in projects whose aim is “simply” to improve waste collection?

A development agency that aims to improve neighbourhood-based waste collection will choose a project strategy that also addresses the sustainability of the achieved improvement. This choice of strategy is based on an assessment of the situation and its own capacities in this matter.

If project support is required on forms of organization and information sharing with community members (as in the community participation as objective approach), there will be a choice as to how and by whom this support will be provided. This can be achieved in various ways.

An assessment of the project situation will refer to the political, cultural and institutional context in the city concerned. It will assess, for example, to what extent decentralization of policy implementation is a reality at city level or regional level; and to what extent the bureaucratic machinery leaves space for real community decision making. It will further consider whether there are residents of the neighbourhoods concerned with the capacities and resources to facilitate community organization and negotiation with the authorities. Finally, an assessment also includes identifying the active presence of other development agencies or NGOs in the area.

Two other project-related factors play a role and need to be objectively considered. These are project time and project funding arrangements.⁽²⁰⁾ Time is needed for development to take root. Participatory projects cannot be rushed, although realistic time limits help to speed up local decision making. Finally, project funding has to have flexible rules within an agreed framework of activity planning and monitoring. Both these factors are necessary to respond realistically to the social dynamics of a community that has strong reasons for its own priorities.

When the development agency has decided what type of community participation is feasible and necessary, then it faces the question of how to organize project development. Will it be more effective if the development agency itself takes responsibility for all project components, ranging from information about the technical and organizational parts of the waste collection itself to the social and community development tasks in a wider sense? Or will it be more effective to involve as many qualified citizens and related NGOs as possible and decide through formal agreements on joint project development? In the latter case, a major role for the development agency will be to facilitate the contributions of actors in the neighbourhood community in the implementation of a shared vision regarding waste management.

Consensus between project partners, including the local authorities, is required on the roles of residents in the development of urban services and about ways of enhancing their rights and capacities to perform these roles as responsible citizens.

VIII. CONCLUSION

IT IS IMPORTANT to examine critically the objectives of waste management projects based on community participation and to assess whether the proposed methods match the scope of the intended effects. The assess-

20. Imperato, Ivo and Jeff Ruster (1999), “Participation in upgrading and services for the urban poor: lessons from Latin America”, Draft, World Bank.

ment is easily confused, however, when the same terminology is used to describe different objectives and methodological approaches. Whatever methods are used, creating participation takes time and requires flexibility in funding strategies. Development agencies should make this possible.

This paper has shown that community participation in waste management not only refers to households setting out garbage bins at fixed times and paying service charges regularly but also concerns the capacity of neighbourhood residents to manage and supervise waste collectors and maintain good public relations, to coordinate with similar groups and enterprises in the neighbourhood and to negotiate with the local authorities about the integration of services.

These capacities become all the more important as public authorities adopt policies to involve community-based and small private enterprises in waste management. Upscaling their involvement in a municipality-wide system requires that these groups and enterprises become well versed in both cooperation and competition with each other and learn how to deal effectively as a community-based sector with the local authority. Also, the authorities have to review their own institutional arrangements for dealing with the community-based actors in waste management in a positive manner. Development assistance may be required to build the capacities of all actors.

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■ Urban Waste Series Books

Organic Waste – Options for small-scale resource recovery, Urban Waste Series 1, Lardinois, I and A van de Klundert, TOOL/WASTE, 1994 – out of print, photocopy available – (code: UW1)

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