

Community Participation in Waste Management

Experiences of a pilot project in
Bangalore, India



Case-study Report
**Community Participation in Urban Solid Waste
Management**

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September 2001

Photo Cover: Councillor of ward 14 inaugurating a waste management neighbourhood scheme. ©Anjana Iyer

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ABBREVIATIONS USED IN THIS DOCUMENT

BCC	Bangalore City Corporation
CBO	Community Based Organisation
CEE	Centre for Environment Education
IEC	Information, Education & Communication
ISWM	Integrated Sustainable Waste Management
LA	Local Authority
MSE	Micro & Small Enterprise
NGO	Non Government Organisation
PPS	Pilot Project Setting
SWM	Solid waste management
UWEP	Urban Waste Expertise Programme
WMC	Waste Management Committee

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CHAPTER 1 INTRODUCTION

1.1 Community based solid waste management in Bangalore – a decade long experience

Since the beginning of the nineties, Bangalore city has seen the growth of several community based self-help initiatives around the theme of neighbourhood waste management. At the start of the UWEP project in 1998, more than 35 schemes were in operation throughout the city, involving different levels of waste services from collection to local composting. Each scheme on the average covered about 300 households. Separation at source was practised, recyclables were being sold to itinerant buyers and wholesalers, and compost produced from organic waste was being sold. Partners in these schemes are the community and NGOs. Besides, there are three medium/large enterprises (two private and one government) that collect organic waste from selected areas and compost it. Neighbourhood based projects were not being run on the basis of full cost recovery and the capital cost was being met out of contributions or donations. This situation warranted a system to make the collection, transportation and treatment of solid waste efficient, cost effective and environmentally sound. Therefore, while these experiments certainly yielded useful lessons, it was felt necessary to try out the application of a solid waste plan on the scale of a ward¹ (about 40-50,000 population).

The Integrated Sustainable Waste Management Plan for Nagapura, implemented under the Urban Waste Expertise Programme (UWEP), sought to bring together all stakeholders in a project to manage the solid waste generated in the ward in an integrated way.

1.2 Introduction to the pilot project at ward 14, Nagapura

Nagapura (ward 14) is one of the 100 wards of Bangalore city. Located on the western part, it has a population of approximately 60,000 people. There is a mixture of residential and commercial areas, along with institutions. Most of the people belong to the middle-income category and there is one low-income locality where the housing is dense. For the purposes of Sustainable Waste Management, ward 14 is sub-divided in sub-wards 14 A, 14 B and 14 C.

Table 1: Profile of the ward

Population	62,000
Number of waste generating units	8,000
Number of roads	98
Waste generation (in tons per day)	24
Number of street bins	162
Number of containers ²	6

1.3 Choosing Nagapura as the location for a pilot project

The implementing agency, CEE had already been involved in a project to collect and compost waste from 400 households since 1994. The Norwegian Agency for Development (NORAD) had supported this programme. The waste management committee (WMC) of the neighbourhood took over the project after NORAD support ended. The councillor of the ward, Mr. Narendra Babu, also took a deep interest in community based programmes. There

¹ The city is divided into 100 wards

² Where waste is stored in bulk before being transported

were a number of waste collection programmes operated by different organizations in other parts of the ward as well, including some initiated by the BCC, but none of these were linked together, nor did they have any good linkages to storage, transportation and disposal.

Therefore, there was potential to expand the project to a whole ward by facilitating linkages between the different service providers and to ultimately link the waste management system to the municipal service. The key strategy was to involve all constituents of the community such as residences, offices, hotels, schools and so on.

During this time, the BCC was also expanding its collection programmes throughout the city. Although there was an inclination to increase the pace of coverage, it was very slow because they used existing municipal sweepers to take on the additional job of primary collection of waste at no extra salary. This meant convincing the unions of the objectives and benefits of the newly added responsibility. At the same time, the BCC was always willing to support private or NGO initiatives in waste services, and already expressed support for example, in the form of providing collection carts. There seemed to be no budgetary constraint in providing collection carts.

Before finalizing the location of the project, CEE called a meeting of interested residents and the councillor. About 20 residents, mostly women, were present. They represented different areas of the ward where there was no waste collection service (and the area was not clean) or where the waste service was inadequate. There was unanimous opinion that such a project was indeed feasible, and the councillor pledged his support. Thus Nagapura ward was chosen to be the location of the pilot project. **The project to be supported under the Urban Waste Expertise Programme (UWEP) was formally launched in early 1999.**

1.4 Objectives of the pilot project

The objective of the project was to develop, implement and evaluate a community managed environmentally friendly and viable waste management system covering one ward of the city of Bangalore (Nagapura). The plan would include the various steps from collection through storage and disposal of different types of solid waste. *The project focused on:*

- ◆ Providing an essential service that was not being satisfactorily provided
- ◆ Establishing and consolidating a co-coordinated and co-operative approach to waste management by the BCC (the municipality) and the community
- ◆ Improvements in the collection and delivery systems

To this end, the project used the following strategies:

- ◆ Education, awareness and training of the various types of waste producers and service providers; programmes aimed at increasing awareness on the various aspects of local governance and the role of citizens in this context.
- ◆ Spreading awareness amongst households and all waste generating establishments on the need for separation of waste at source and interacting with the BCC to gradually reduce the number of street bins.
- ◆ Advocating the need for scientific environmentally safe disposal systems as well as the selection and identification of a landfill site where the waste from the ward can be treated and disposed of.
- ◆ Community involvement in the process, the monitoring and evaluation.

1.5 Planning

The entire ward was divided into thirteen sectors and a baseline survey was conducted to estimate the number of waste generators by category. The intention was to progress with the project sector-wise. As a first step, CEE determined if any waste collection service existed in the area, and if so, who or which organization was providing the service. This would eventually determine the exact role of CEE. Thus, the two questions facing CEE were:

- ◆ Will it have to help the local residents in starting a waste collection service (*this would then have to start from scratch*) OR
- ◆ Will it need to assist and facilitate the service provider in increasing community participation, improving service efficiency, and ultimately forging a good link to transportation and disposal?

The decision to adopt the first level of intervention was taken in the early stages of the project, after consultation with the community stakeholders in sectors one and two. Once the BCC began to take a pro-active role in primary collection, CEE's role was restricted to the second form of intervention described above.

CHAPTER 2 APPROACH TO COMMUNITY INVOLVEMENT

2.1 Defining participation

As with any community based waste service, there are three main elements to defining participation: awareness, education and management. Each element is equally important and the level of participation required depends upon who is rendering the service and what the community wants.

At the most basic level there is the daily action of handing over separated waste at a particular time to the waste collector. At the next is the question of payment of service charges, normally a small monthly payment that is fixed depending upon what the community can “bear”. At the end of the spectrum is that of participation on a committee that plans and manages the programme in its entirety. Participation is sometimes expressed in other ways: a resident or a commercial establishment may agree to provide space to park vehicles or make financial contributions to equipment and carts.

2.2 Initiating a waste collection service

Beginning a waste collection service and a clean-up programme in a neighbourhood presents many issues that need to be tackled. Although the programme may have responded to a demand from the residents and is taken through all the stages of community building and consensus seeking, there still lies the important matter of eliciting total participation.

Normally a few neighbourhood “activists” or residents take on the task of a clean-up, ask for or respond to an external agency (such as an NGO) and participate in planning meetings. This took place in Ward 14 as well. This does not mean that the entire neighbourhood shares the same enthusiasm and concern. **Eliciting participation at the initial stage of a project is a complex process – certain factors such as the presence of street dust-bins that are nearby and handy and previous attempts at launching a similar project that were not sustainable strongly influence initial enrolment.**

2.3 Key actors in the ward – a background

In Nagapura ward, several organizations and individuals have been involved in waste services since 1993. The private sector and NGOs/CBOs provided waste collection services and in one case composting services, while transportation and disposal is left to the BCC or to the conventional contractors. Some of the earlier entrants into the field of waste collection were a private entrepreneur, the CEE, and the concerned residents’ group through the collection and composting project, and the initiative of the political representative. The latest entrant is the BCC as part of its citywide initiative to provide the service.

Informal leaders in the ward play a key role in waste services. There are two such leaders, both of whom run waste collection services for a small service charge per month. One of them also operates in Bovipalya, a low-income area. Both are political aspirants and as such already have a presence in their respective localities. Generally such leaders are known to take up local causes and represent the citizens’ concerns. **The councillor is interested in very interested and involved in waste management issues.**

Table 2: Service providers in Nagapura

Sl.num	Initiated by	Managed by	Locality	Number of houses*
1	CEE/UWEP	WMC	R Block	90
2	CEE/UWEP	WMC	N Block	220
3	CEE/UWEP	WMC	West of Chord Road	390
4	BCC	BCC (with monitoring by residents ³)	K Block	2042
5	BCC Contractors	BCC (with monitoring by residents)	14 B	400
6	BCC Contractors	BCC (with monitoring by residents)	14 C	125
7	Private entrepreneur (Mr. Gowda)	Entrepreneur	Bovipalya	247
8	Private entrepreneurs (Mr. Kumar & Mr. Nagaraju)	Entrepreneur	Mahalaxmipuram	330
9	BCC	Entrepreneur	Commercial establishments in ward 14	100
	TOTAL			3944

* Participation estimated at the close of UWEP in April 2001

³ Residents have been identified, first workshop held to define process, system will soon be set in place

CHAPTER 3 INTEGRATION OF COMMUNITY STAKEHOLDERS

3.1 Facilitation and coordination

The three main service providers in Ward 14 are the BCC, the Waste Management Committees of three localities and three private entrepreneurs.

Wherever BCC renders primary collection, the existing municipal staff of the BCC has been deployed. The pushcarts were provided by corporate donors under a citywide initiative for cleaning Bangalore city called “Swaccha Bangalore.”

The wide assortment of service providers inevitably gave rise to co-ordination problems. Bangalore, like other cities in India had for long the method of depositing waste in street bins. Waste could be deposited at any time, and the collection and transportation by the LA was very poor. This meant that waste would overflow from the bins and lie around for days. The door to door collection programmes did not do much to improve the situation. Except in the localities where the waste management programme was initiated by CEE in 1994 (the waste from this project was being composted locally), waste was being collected from the houses and deposited in the nearest street bin and was not being cleared efficiently or systematically. Therefore there was not much impact in terms of neighbourhood cleanliness. **Therefore, the reduction in the number of street bins was seen as crucial to improving the systems all around.**

CEE realized that for the level of cleanliness and efficient management of waste, certain processes are key to the success of the programme:

- ◆ Co-ordination and understanding between the waste collectors employed by the different service providers
- ◆ Co-ordination with the local office of the BCC, headed by the Medical Officer of Health. The BCC is ultimately responsible for waste management in the city of Bangalore.
- ◆ Active co-operation by the BCC elected representative
- ◆ Efficient clearance by the truck and eventual transportation to the treatment site
- ◆ Reduction in the number of street bins

These objectives were sought to be achieved by the following strategies:

- ◆ Assisting the different service providers to increase and maximize the number of households participating (IEC)
- ◆ Advocating with the BCC a separate system for bulk and commercial waste generators (workshops and meetings)
- ◆ Constant interaction with BCC field staff to remove street dust-bins on a continuous basis
- ◆ Training inputs to all waste collectors, inspectors on different aspects of ISWM

The impact of these strategies are highlighted in the different sections that follow

3.2 Constituents of a community – Bulk generators

One of the objectives of the UWEP project was to involve different categories of waste generators, including bulk generators and to create a platform where citizens can meet officials, political representatives and network with end-users of waste generated. A **workshop was held for example with owners of restaurants and hotels in an effort to link their waste generation to a separate system.** Although personal contact with commercial waste generators almost always evokes positive responses, attendance at collective occasions such as workshops is always poor. After many months of advocacy by CEE, commercial establishments and hotel owners are now linked to a separate system on a user fee basis. This is because there now also is a legal obligation not to mix waste from commercial establishments with household municipal solid wastes, but efforts are necessary for the proper treatment of the waste collected. An entrepreneur collects the waste and uses the organic component on his farm as manure.



Photo 1: Health officials discuss swm with hotel owners in ward 14. ©Anjana Iyer

At the close of the UWEP project, about one hundred commercial establishments (all hotels and eateries in the ward, other shops) pay service charges ranging from Rs. 250 to Rs. 1000 a month to the entrepreneur and have their waste collected every day. The fees were decided in consultation with the BCC, the entrepreneur and the commercial establishments. A receipt is issued upon payment of service charges⁴. This increased the transparency and responsibility of the service provider, the BCC officials and the establishments.

3.3 Involvement of women & young people

Women have been playing a very active role in Nagapura ever since the start of waste collection programmes. They serve on waste management committees (WMCs), participate at

⁴ Previously this was never done and this practice used to breed a lot of corruption

city-level workshops and meetings and play a large role in motivating fellow citizens. Of the three waste management committees already formed, women make up about 60 %.



Photo 2: Residents at a waste management committee meeting. ©Anjana Iyer

The waste management committees in both sectors where primary collection of waste were launched are active. Women fill in many of the positions. The committee manages the accounts, pays the salaries of the waste collectors and monitors the running of the programme. One waste management committee (the West of Chord Road area) is in fact linked to the local association of women that has been in existence for the last two decades. In other areas where BCC provides the primary collection service, a system of monitoring of service through citizen involvement is being put in place. (*See later section for a description of this programme*).

School students were targeted separately so as to create sensitivity to environmental issues. Different strategies were used – a training programme for teachers which encourages waste management to play a bigger role in school curricula, guest lectures, summer camps and field visits for students. The teachers' training programme focused not only on the technical issues concerning waste management, but also on the importance of the role of the teacher in influencing students' sensitivity to environmental issues. The programme described UWEP's efforts in the ward, and the proposed school programmes. The teachers were taken on a field visit to a neighbourhood composting project. CEE organized a summer camp for school students of Ward 14 with the theme "Explore Your Area". Fifty students participated with enthusiasm and learnt about the different aspects of their neighbourhood (roads, drains, parks, urban wildlife, garbage etc.)

3.4 A students network – the Garbage to Gardens newsletter

A network of schools in the project area to bring out a Newsletter titled ‘Garbage to Gardens’ has been formed. This network of schools is part of the larger network of schools being established in different places in India through the regional offices of the Centre for Environment Education. This newsletter is being developed as an outreach tool to spread messages on solid waste management. Students are invited to write articles using garbage as the theme, including about types of waste, health effects of wastes, separation of wastes and reuse and recycling of wastes.

Some of the write-ups are also about plastic bags, paper recycling, composting, and related issues and about the problems faced locally due to garbage.

3.5 Waste collectors and their roles

Resource persons under the UWEP project have trained twenty-seven waste collectors operating in Nagapura. They were oriented to separation of waste at source, safety measures to be adopted whilst handling waste, attitude and behaviour towards citizens etc. Although several residents segregate the wastes, CEE’s experience in the field suggests that a substantial percentage of segregation is achieved (at least 40%) *after* the waste is handed over. This seems to be unavoidable and is the norm citywide. However, waste collectors normally pick out waste that is useful to them as and when it is handed over, and this seems to be convenient to them as they pick the useful waste from the surface of the bins and this avoids the practice of having to dip their hands deep into the bins. Since all waste collectors were exposed to the different aspects of waste management, as well as good practices, municipal workers also started realizing the value of certain types of waste and take them away to be sold⁵. This however introduces an element of competition for recyclable waste as more and more waste handlers are exposed to the economic benefits of resource recovery. This affects the livelihood of the people traditionally involved in waste picking.

⁵ UWEP staff was the key resource persons at a series of training programmes where 1200 municipal workers were trained in preparation for the launch of “Swachha Bangalore”. The municipal workers of ward 14 also participated.

CHAPTER 4 TYPES OF WASTE SERVICES

4.1 Case study of a private enterprise

A private operator runs a collection services at Nagapura. He operates in the lower-middle income area. The carts are sponsored by local donors (a large shop and the local branch of a bank). He is able to elicit a reasonable degree of participation from the households as he is recognized in the community as a social worker who assists people with their grievances regarding civic services. He is also politically active, having contested the municipal elections once against the presently serving councillor. Justifiably he could be labelled a “community actor”, as he is a resident of the locality and is part of a development association linked to the improvement of local living conditions. About thirty percent of the total number of households participates, and the residents extend their co-operation, but linkages to the municipal system have to be improved. One of the reasons for the lack of institutional support from the Bangalore City Corporation (BCC) is political interference from the councillor, who perceives the service provider as a competitor. This problem was eventually solved through persuasion and this resulted in a general service improvement.

CEE has assisted him by providing communication material on the waste management programme and its benefits to the community. CEE has also included him in meetings with the local Medical Officer of Health and the Health Inspectors. This has helped improve the transportation and collection efficiency. He is however not able to increase the participation substantially, as residents do not perceive waste management to be a priority. They would like to see their problems with sanitation and water supply solved first.

4.2 Case study of the municipality & its involvement in doorstep collection

In April 2000, the BCC and the Bangalore Agenda Task Force (BATF)⁶ launched the door-to-door collection service of waste in Ward 14 under a citywide initiative called “Swachha Bangalore”⁷.

Under the newly launched programme, 20 new carts sponsored by the corporate sector were added to the doorstep collection services in Nagapura. Currently, there are 30 collection vehicles being used in the ward. The BCC printed a lot of communication material aimed at motivating citizens to participate in the waste collection programme and in the segregation of waste into wet and dry components before the launch of the programme. CEE assisted the BCC in conducting training programmes for the waste collectors who were to be inducted into the doorstep collection service. However, participation, based on an independent survey carried out by CEE during the post-launch period, was as low as 30% of the total number of residents. Therefore CEE assisted the BCC in increasing the level of participation by engaging women volunteers to establish door-to-door contact with the residents⁸. **After these efforts, the level of participation (estimated about two months after the citizen enrolment programme began) has increased to 90%**⁹.

⁶ Set up by the newly elected government for infrastructure and service improvement.

⁷ Meaning “Clean Bangalore” in the local Kannada language

⁸ The effectiveness of this intervention is yet to be evaluated

⁹ At the close of UWEP in April 2001

4.3 Case study of an NGO initiative

This project was set up as a response to the demand of the citizens of a neighbourhood for a cleansing programme. The NGO named in this case study is the CEE. The planning steps are highlighted below:

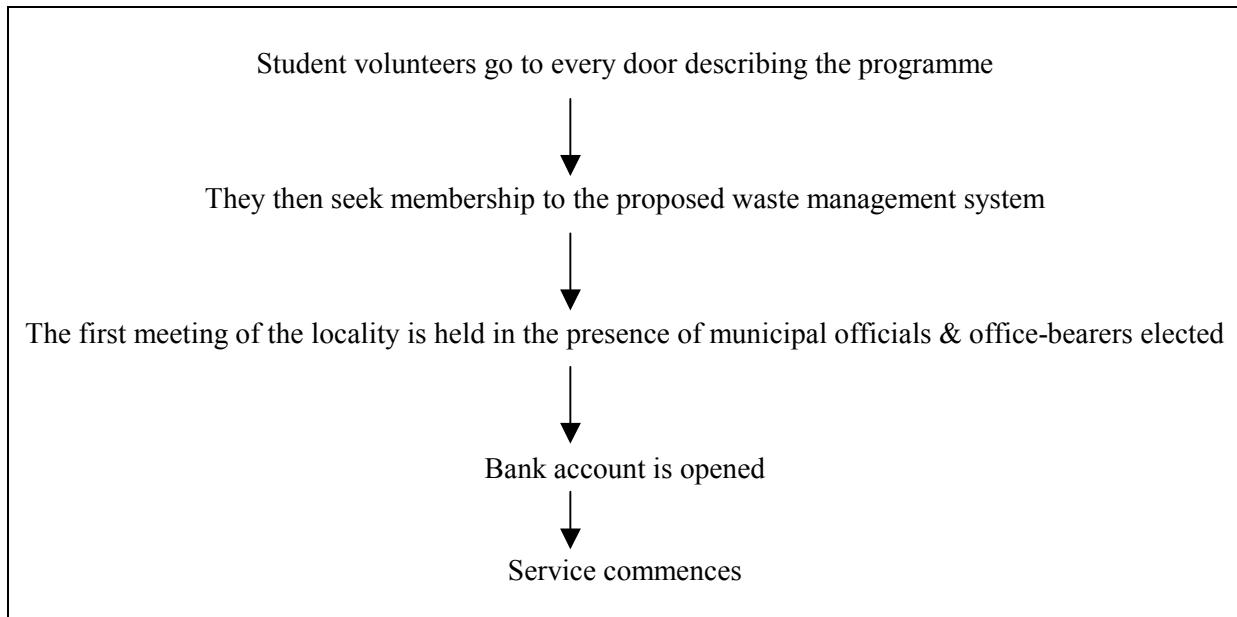


figure 1: Example of an approach for a waste management service used under the UWEP-pilot project.

In the project area, considerable time and resources are spent in sensitising residents to the proposed scheme and methods of segregation are explained in detail. Volunteers conduct several rounds of motivation to enrol members as well as to encourage segregation.

Over the last five years, since the commencement of collection and composting services in the West of Chord Road locality (430 households), there has been a gradual increase in the co-operation between the three partners – the BCC (LA), the group of residents managing the composting project (the CBO) and CEE (NGO). Since the start of UWEP, two more localities (350 households) have been added. BCC staff has participated in all the planning meetings, and the storage and collection points of rejects have all been planned together. The BCC made a commitment to reduce the number of street dustbins gradually, and towards the close of the UWEP programme, the number of bins in the locality has reduced from 55 to 9. This has a very positive impact on the level of cleanliness in the neighbourhood.

4.4 Indicators to measure effectiveness

Some of the measures of performance adopted to assess the effectiveness of the programme are:

- ◆ Participation of residents (numbers), adherence to timings and promptness in payment of service charges
- ◆ Degree of separation (observations in the field)
- ◆ Cleanliness of the surrounding environs (empty sites and drains clear of garbage, absence of street bins)

- ◆ Involvement of the waste management committees; regularity of meetings, personal contact with fellow residents, regular liaison with the municipal authorities, administration of accounts and management of labour etc.
- ◆ Response from the municipal staff

Segregation takes place to the extent of about 50 %. Waste collectors carry out the task of further segregation and take away whatever they find of saleable value.

Community response to each of these service providers is varied. The extent of community participation depends upon the linkages to efficient storage and transportation (thus providing a good visual impact to the citizens) as well as the ability to provide a regular, efficient doorstep collection service. Thus levels of participation fluctuated in the beginning and intermediate stages until the systems stabilized and repeated motivation and awareness programmes were carried out. This eventually stabilized the levels of participation.

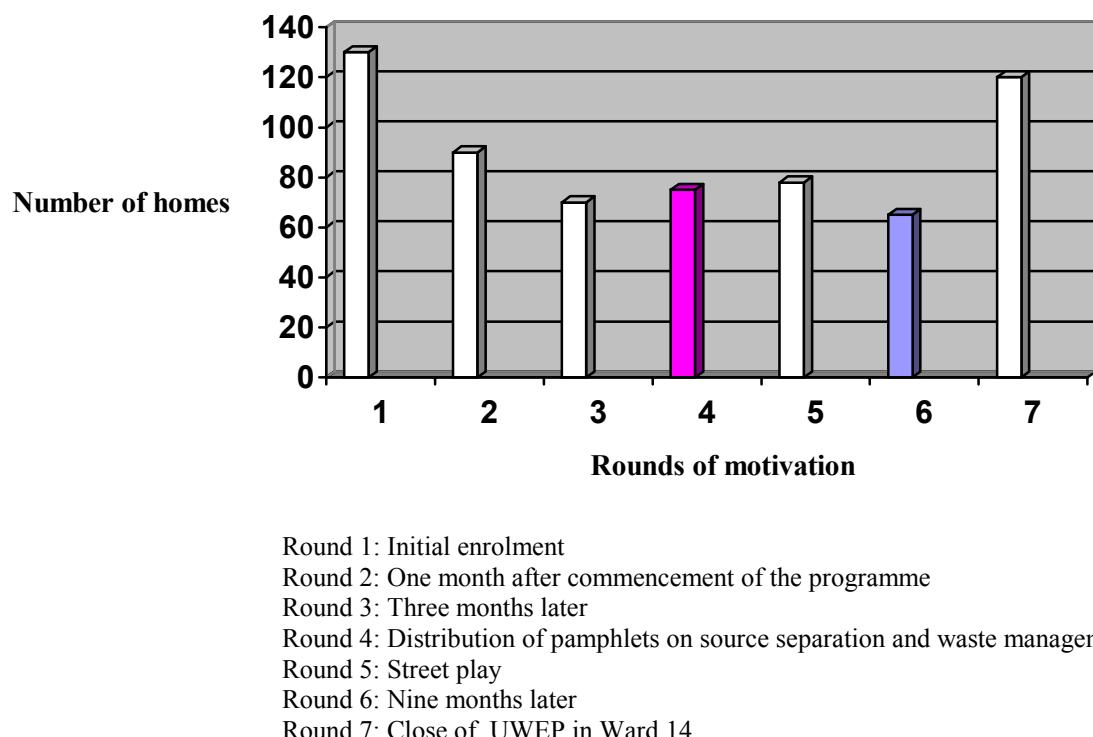


figure 2: Graph depicting participation in one neighbourhood

4.5 Experiences of community involvement – the UWEP project

Each type of waste service demands different degrees and intensities of community involvement. Starting at the most basic level, participation of households in handing over waste depends upon two factors – the presence of a street bin that is nearby and handy and a previous instance where a doorstep collection programme was commenced and abandoned. Both these factors become more relevant if service charges are involved, and there is a general reluctance amongst residents to pay and participate in the service unless they can see a tangible improvement in cleanliness. In Nagapura, CEE staff found a direct link between the presence of street bins, the willingness to participate, and actual participation. Continued interaction with BCC health officers and health inspectors led to a reduction in street bins and this improved participation dramatically. As each bin was removed, project staff found waste

being thrown at the same spot (where the bin used to be) for a few days, but this decreased gradually. It has been an uphill task to educate people to hand over waste at a particular time of the day (between 8 a.m. & 9.30 am), but once the habit was inculcated, it was no longer a problem. Although there was initial resistance to storing waste on Sundays¹⁰, residents were seen to be co-operating as the programme progressed.

¹⁰ This being the waste collectors' weekly holiday

CHAPTER 5 METHODS TO ELICIT PARTICIPATION

5.1 Door to door contact with the community

The most effective method to elicit participation is to visit each and every household or other establishment and establish a personal rapport. Under the project, this has been done with the help of student volunteers. Communication material describing the different aspects of waste management was also distributed. Volunteers are drawn from a resource pool of college students with a background of environmental education. They are paid an allowance of Rs. 100 (US\$ 2.25) per day. This lends a certain continuity to a phase of intense mobilization or campaigning. Community members complement their efforts from time to time. Relying to the entire extent on community leaders or pro-active citizens has not been successful and the key reason for this is the constraint of time.

Eventually the ability to use this strategy throughout the city will depend upon how the staff of BCC can take it upon their own shoulders. Their inspectors have been trained on different motivation techniques, again with the help of resource persons from CEE, and professionals from the field of human resource development. It is not viable to use the services of student volunteers throughout the city, since this is costly and will need a large amount of funding. Therefore, the strategy has been to motivate the health inspectors of the BCC to take on this job themselves. A moderate level of success has been achieved in other parts of the city.

5.2 Street theatre & Magic shows

In an effort to create awareness amongst the general public and floating population, street theatre has been used. This method has been found to be especially useful to attract the attention of people in busy areas as it helps to inculcate civic consciousness amongst street vendors and the floating population.



Photo 3: Street theatre as a medium to arouse interest in waste management , ©Anjana Iyer

Key messages: The waste collector performs an invaluable service by cleansing the area; waste is everybody's responsibility, waste needs to be treated in a proper manner, do not take the "Not in My Backyard" attitude.

Another interesting strategy to elicit participation was a magic show that was arranged during a workshop for the residents of Nagapura. The magician had the ability to arouse the interest of the participants on the subject of garbage and citizens' responsibility.



Photo 4: The "Segregation Game" being played at a community meeting - to make people understand the concept easily. ©Anjana Iyer

5.3 Other awareness programmes

Besides street theatre and magic shows, one awareness programme was scheduled to coincide with Independence Day. One of the neighbourhoods has a flag-hoisting ceremony every year on this day, so a number of people commonly congregate on this day. This was a good opportunity to spread awareness on the cleansing campaign.

The community hall attached to a local temple has often been used for meetings, workshops and camps. As the majority of the population is Hindu, this practice is found to be convenient.

5.4 Carrot or stick approach?

There is constant debate as to whether communities participate in waste management programmes because they are motivated to do so or that legal obligations force them to do so. Since the beginning of this year, municipalities all over India have a mandatory obligation to ensure primary collection of waste. This legal obligation has been established in response to litigation filed by a private individual. The Supreme Court of India has formalized a report on solid waste management for Indian Cities through an appointed committee of experts. This report clearly lays down norms, standards and practices in waste management. **The most path breaking of them are compulsory source segregation, doorstep collection of waste**

and environmentally friendly treatment methods such as composting. The Municipal Solid Waste Rules, brought out by the Government of India advocate the same. Although these rules give an impetus to the service providers and municipalities, it is a fact that persuasion and motivation indeed achieve better results than enforcement. Besides, municipal officials are simply not in a position to enforce rules in totality when populations and density are very high. To a certain extent they are able to enforce these rules against commercial waste generators.

However, experience also shows that investing efforts in motivating communities alone does not suffice. Levels of participation swing up and down. It is equally important to keep in touch with municipal officials and political representatives so that their roles are executed properly. Besides, continuous pressure and interaction with the municipality such as in the case of removal of street bins helps to keep the level of participation consistent and stable.

5.5 Monitoring and supervision

As Ward 14 has a mixture of waste service providers and different degrees of community involvement, the structures for monitoring are also different. The two different structures are described below:

In Sectors one, two and three the waste management committees operate, therefore these committees liaise with the local health inspectors and officials. Besides, they interact directly with the waste collectors and the supervisor to oversee the operations in the collection of waste.

In other areas where the service providers are either private operators or the municipality, the BCC is tapping the experience of the pilot project in identifying and institutionalising a neighbourhood watch programme for cleanliness called "**Shuchi Mitra**". This obviously also benefits the pilot project by helping it to realize one of its objectives viz. community involvement in a legitimate way. As a first step, CEE instituted an effort involving door-to-door contact of almost 3000 households in Nagapura, and about 300 residents expressed their willingness to volunteer for the neighbourhood watch programme. Of these, about 60 residents attended a workshop where the roles and responsibilities of such citizens were debated. The project at Ward 14 is being used by the BCC as a learning experience so that such a citizen enrolment programme can be expanded citywide. About 35 residents have been recommended as "Shuchi Mitras" or community volunteers for cleanliness in Ward 14.



The duties of Shuchi Mitras are to assist the BCC in:

- ◆ *Monitoring the doorstep collection of garbage (regularity, timeliness etc.)*
- ◆ *Monitoring the storage and transportation of garbage from collection points*
- ◆ *Citizens adherence to BCC rules regarding debris, storage and disposal*
- ◆ *Citizens adherence to BCC rules regarding storage and disposal of garden waste and BCC's service for the same (once every week)*
- ◆ *Prevention of littering by road users, street vendors and shops*

Figure 3: Identity card for a Shuchi Mitras

These volunteers will be given an identity card by the BCC. This gives their pro-active involvement some legitimacy. Shuchi Mitras should, apart from verifying the daily attendance of cart operators and truck drivers, record weekly observations in the suggestions register in the possession of the respective health inspectors. The comments and suggestions should be discussed at the weekly meetings where the Medical Officer of Health writes her/his feedback or action taken.

CHAPTER 6 LESSONS LEARNT

6.1 Community members as managers

The three waste management committees of the three neighbourhoods involved in the waste management project involve themselves up to a certain point – this means paying monthly salaries to staff, replacing worn out equipment or liaising with the BCC for regular support services. However, experience in Nagapura and elsewhere in the city indicate that the residents, in the absence of the NGO, are not in a position to involve themselves in the entire range of management issues – sometimes this may have to do with a labour problem (absenteeism, strikes for higher pay, turnover) or the ability of the WMCs to tackle inconsistent community participation. When participation falls, are they, in the absence of the NGO, in a position to further motivate their fellow residents? The fact that the municipality renders primary collection services without a special fee or charge¹¹ in the neighbouring localities also makes it difficult to coax their own neighbours into paying the monthly service charges regularly. Where WMCs run the waste management programmes, each household pays a fee of Rs. 15 per month. This is sufficient to pay the salaries and bonuses of the waste collectors and the supervisor, as well as retain a surplus in the account for repairs and depreciation (replacement) of equipment and tools, provided the level of participation is at least 80 to 85% of the total number of households.

There are a few options to solve these problems – official recognition of the project by the BCC, or professional involvement of an individual or an MSE in the day-to-day management. Community based waste management projects are sustainable and effective if institutional support and recognition is strong. Wherever private operators are involved, the roles and responsibilities need to be well defined, including the relationships with municipal officials and political representatives. Experience shows that it is more practical and desirable to involve the community in terms of participation and supervision, but not as managers working on a voluntary basis. Linkages to proper waste channels have to be established with clearly evident interests of stakeholders.

6.2 Sustaining community based waste management projects

The initiatives being taken in the PPS for sustainable waste management indicate that eventually, an integrated system will be put in place. The objective of the project at Nagapura was to link each and every waste generator to an efficient waste management system based on ISWM principles. At the close of the project, a little over 50% of the ward (about 4750 out of 8000 households and other establishments) has been covered. At the beginning of the project, CEE initiated primary collection and set in motion the systems, but moved specifically into the role of facilitator and educator once BCC took over the responsibility of primary collection. This decision, agreed upon by all stakeholders, was taken in the interest of long-term sustainability of the project. While all of 14 A is covered, sub-wards 14 B and C are covered only to the extent of about 30%. Both these sub-wards are in the hands of private contractors of the BCC for transportation and disposal. A new contract stipulates a lot of stringent conditions, one of them being that the contractor must also carry out primary collection. Since October 2000, this stringent contract is yet to be passed by the Council of the BCC¹². A solution to this problem will be found as the Supreme Court directives need to

¹¹ Currently included in the property taxes collected by BCC

¹² a lot of political self-interests are at stake

be implemented to avoid contempt of court proceedings. Therefore the entire ward will be covered by the end of the year 2001 or early 2002.

An integrated system means that separation at source, resource recovery, composting of organic waste, involvement of waste pickers¹³, integration of the community and stakeholders will all fit into place once the BCC streamlines its operations city-wide. Since February 2001, there is an attempt to send the organic waste from Nagapura to a new facility of the government situated at a distance about 25 kms) to be composted. Operations are currently being streamlined.



Photo 5: Waste collector depositing waste in the compost pits. ©Anjana Iyer

The issue of service charges is slightly more complex. As the BCC increases its coverage of primary collection, there will inevitably be fee coverage problems. This year, property taxes were revised after a gap of nearly fifteen years. Property owners experienced an increase in taxes ranging from 50% to 150 %. This means that there are additional finances available for solid waste management, but the BCC needs to estimate its needs in this area as changes and investments are required in all areas. Therefore, the BCC cannot continuously render the service without either making budgetary allocations or collecting direct service charges for depreciation and replacement of equipment¹⁴ and any other expenditure. A legislative amendment to the Karnataka Municipal Corporations Act (which governs the BCC) has now been passed and this proposes to levy a solid waste management cess, in addition to the property tax. This will affect Nagapura's position as well.

¹³ People who pick waste from the street bins to make a living

¹⁴ Salaries are already budgeted for since collection is done by municipal sweepers on BCC payrolls

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ACKNOWLEDGMENTS:

The author wishes to thank:

1. The staff and coordinators of the Centre for Environment Education (CEE) for providing all the inputs towards the production of this paper.
2. The members of the core group of Swabhimana, local partners of UWEP in Bangalore, for their constant support and encouragement to this pilot project.
3. Funding for this pilot project has been provided under the Urban Waste Expertise Programme (UWEP) executed by WASTE, Gouda, The Netherlands. The project has been implemented locally by CEE South, Bangalore. All communication and other material arising out of the project has been developed by CEE.