

**Improving the lives of the urban poor**  
**Case studies on the provision of basic services through**  
**partnerships**



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# I. Introduction

## A. Urban poverty and local interventions

Poverty in Asia-Pacific is still predominantly rural but rapid urbanization may change this picture in the coming years. The United Nations estimates that by 2025 the majority of the population in the region will be urban and unless this urbanization process is well managed, an increasing proportion of the population (eventually the majority of the population) in cities and towns will be poor. In the coming decades, national policies and local initiatives to improve living conditions in cities will, therefore, become more and more relevant for reducing poverty in Asia and the Pacific.

Extreme income poverty (as measured, for example, by the dollar-a-day line) is rare in urban areas, but higher income levels do not always translate into better living standards. Because in the urban economy most goods and services are traded and paid for in cash, residents in cities need a much higher income than rural residents. Basic services are more frequently available in cities and towns, but the urban poor can face legal and financial barriers to access them. Many people are prevented from using some public services because they are not legally entitled to live where they live. The financial barriers do not refer only to the nominal cost of a service, but to the time lost in accessing them, and the income that is foregone in the process.

Availability of land for housing is another typically urban problem. Because the poor can only afford to live in places that nobody else wants, their houses are typically in areas that have no basic infrastructure, are at risk of flooding or exposed to contamination. Furthermore, many of the urban poor do not have a legal claim to the land where they live and are at constant threat of being evicted. It is estimated that more than 550 million people in this region (excluding China) live under such conditions in areas referred to as slums.

Improving the living conditions of the slum dwellers is a growing challenge for the governments in this region as it often lacks the capacity or the resources to provide the infrastructure and basic services needed in these areas. Capacities need to be built and more resources should be mobilized through both Governments and the private sector. Most importantly, institutional arrangements will need to be changed because the current laws, regulations and business practices do not reflect the conditions and needs of the urban poor.

Many of the required actions will need to be taken at the national level: the poor need macroeconomic conditions that allow them to earn a decent income, or laws and regulations that are suitable to their needs. But many of the conditions that affect the poor are local in nature and can be better addressed through interventions designed at the local level. Local governments play a key role in urban poverty reduction, as they are in the best position to deliver basic services.

Local initiatives, most of them small in scale, are often the most effective measures to improve the living conditions of the poor. Programmes that are designed and implemented at a national level are often imposed from above without consideration for local conditions and needs. On the other hand, interventions designed by local actors can rely on the local knowledge and can be tailored to the specific conditions of the population in the area. Small-scale programmes are also more conducive to participation

by the poor in the design and implementation, thereby increasing ownership and helping sustainability.

## **B. Case studies**

Because of its regional focus and extensive regional networks, ESCAP is in an advantageous position for identifying and disseminating effective practices that can increase income or bring basic services to the poor. In this publication, five case studies of local initiatives that improve the delivery of basic services to the urban poor are compiled. Each one of them has innovative and unique features from which lessons can be extracted and, hopefully, applied in other locations.

### **1. Solid Waste Management in Bangladesh**

A local NGO called Waste Concern has organized selected communities in Dhaka, Bangladesh, to set up a system of door-to-door garbage collection and composting. Because 80 per cent of the domestic waste in Dhaka is organic, there is huge potential for transforming it into compost. In this practice, the compost is bought by a fertilizer company that enriches and markets it for organic farming throughout the country. The system has two sources of income: the fees paid by each household for the collection service and the revenues from marketing the compost.

### **2. Community Toilets in Indonesia**

An NGO constructed community toilets in Tangerang, an industrial area close to Jakarta (Indonesia) where migrant workers settled in areas without water and sanitation facilities. The facilities were built with the help of foreign donors but are now sustained by the user fees. The centres sell fresh water by the bucket and provide toilets and bathroom services. The facilities are managed like private businesses, by a selected family from each community.

### **3. Water for Poor Communities in the Philippines**

The Water for the Poor Communities initiative came out of the privatization of the water supply system in Manila (Philippines). Manila Water Company Inc. (MWCI), the company that won the concession for maintenance and expansion of the system in the East Zone of Manila, realized that the standard service was not accessible to the slum dwellers in the area. To solve this problem, the company partnered with communities and designed water distribution systems adapted to the needs of each community. To address the difficulties in providing individual connections to households that have no legal title and are often physically difficult to reach, the company provided the water in bulk to the community, which in turn distributed it among the households. Although most inhabitants of these communities still lack individual connections, the system has improved their access to water and has reduced the losses due to non-revenue water for the company.

### **4. Water Distribution in Colombo**

In Colombo, Sri Lanka, a different approach to the privatization of water was implemented, affecting a community of 556 households. Under a project sponsored by UNESCAP, a small construction company obtained a concession to provide water through individual connections in a slum. The company constructed the pipes inside the slum, installed individual meters for each household and collects the bills monthly. The company buys the water in bulk from the state-owned utility. Households in the area previously relied on 8 public stand posts to collect their water and were willing to pay for

the individual connections. A careful partnership between the community, the private company and the water utility was designed to run the system.

## 5. Community Contracts System

The last case describes a generic methodology for getting communities involved in the construction of infrastructure of their concern. Under the Community Contract System developed in Sri Lanka, communities act as promoters, engineers and contractors, as well as end users. Besides being a procurement mechanism, it is an empowering tool for the urban poor. This system has been implemented for the past twenty years by the National Housing Development Authority and by other agencies for the construction of toilet blocks, water stand posts, community centres and other amenities.

### C. Partnerships that work for the poor

The five initiatives presented in this publication were all designed as local interventions, although some have been replicated on a wider scale and the Community Contract System has become a national programme. Besides this, there are other common characteristics worth highlighting:

**They are partnerships between different institutions.** Central and local governments are increasingly realizing their shortcomings in providing services and infrastructure that the growing urban population demands. Without diminishing their responsibilities, partnerships between the government and the private sector or civil society are increasingly popular. These partnerships have the advantage of bringing the strengths and capacities of different institutions, and of allocating rewards and risks in an efficient way. The examples presented in this volume are partnerships between governments and private companies that also include communities, NGOs and/or the informal sector.

**Poor people are part of the partnership.** Community organizations have been involved in the design and implementation of the practices. In some cases, the practice relied on existing community organizations; in others, such organizations had to be established before starting the operations. Participation by people who benefit from the intervention improves efficiency and sustainability. If slum dwellers feel ownership of the water distribution system, they will more likely pay their fees. Equally important, such interventions will act as empowering mechanisms for the community.

**The practice used external assistance, but relies on internal resources for sustainability.** The five cases have benefited from some form of external aid, but this was typically provided as an initial grant to help start the operations. In the Community Toilets practice in Indonesia or the Solid Waste Management practice in Dhaka, foreign donor assistance was necessary to acquire land or built infrastructure. In the Water Distribution practice in Colombo, foreign assistance was provided directly as an initial subsidy to the private investor. In any case, the practices are designed in a way that their sustainability relies exclusively on local resources, mostly on the fees paid by the users.

**The poor pay for the services.** All the practices rest on the assumption that the poor can pay for services and that are willing to do so, if the services are provided in ways that fit their needs. The conditions can be very different across locations, and the interventions need to be designed specifically. Some slum dwellers are not poor in income terms, despite having no access to basic services. They can easily pay the full cost of the service; such is the case in the community toilets example. In other cases, users are not able or willing to pay for the full service and other sources of income need to be explored; this was successfully done in Dhaka.

It is also true that the poorest of the poor may be completely unable to pay for services. For these cases, a well-thought system of subsidies needs to be designed. In the Water Distribution project in Colombo, a minority of the households in the community was considered too poor to pay for the connections and fees. Therefore, arrangements were made that allowed them to use public stand posts.

All the practices created a market for basic services to the poor where none existed, or improved an existing one. In the slums of Manila, some people were buying water from private vendors at a rate several times that of the piped water that the better-off households were paying. The residents of the Colombo slum were not paying for the water, but the time wasted in fetching it from the public stand post precluded the women in the community from undertaking more productive activities. The market mechanism that help the poor, may sometimes be only indirectly connected to the service being delivered, as when the demand for organic fertilizer in rural Bangladesh provides a source of income for the solid waste management system in Dhaka.

**Polluter pays.** Water, sanitation and garbage collection are services that improve the lives of the direct users and protect the environment for everyone else. In the first four cases presented people have to pay for the water they consume and the waste they produce. This makes the users fully responsible for the environmental impact of consuming water and producing waste, contributing to the environmental sustainability of the cities.

**NGOs acted as facilitators.** Bringing together international organizations, governments, private companies and communities requires a credible institution with sufficient expertise to understand the issues, and sufficiently close to the people to be trusted by them. NGOs played this role in most of the cases presented here.

#### **D. Replication, adaptation and up-scaling**

Local interventions, by definition, have limited scope. The practices described here have only reached a limited number of slum dwellers in certain cities. The only way for local interventions like these to have a substantial impact on the lives of slum-dwellers across Asia is by replicating and adapting them across many locations.

Direct replication of a successful practice hardly ever works, because the conditions are never completely the same in two locations. Instead, the practice needs to be adapted to the new circumstances, extracting the lessons that are applicable and rejecting the components that are not. This requires a good understanding of the original practice as well as local knowledge. Furthermore, many successful practices are originally the work of persons with unique qualities and motivation. Without its original 'champion', the practice may fail to achieve its objectives.

A practice that has been successful in a small environment can also be up-scaled to expand the number of beneficiaries. Many local initiatives would be more efficient if they were applied on a larger scale, because some overhead costs could be spread across a larger pool of clients. However, it is difficult for practices that rely on community participation to become larger without losing the proximity and trust between the stakeholders that made them successful.

## **E. Knowledge transfer**

Replication, adaptation or up-scaling requires the transfer of knowledge from the people who originally designed and implemented the model to the people who want to replicate it. This can be achieved through different means like publications, workshops, direct contacts, or a combination of them.

It is important to differentiate between different stages of the transfer of knowledge. The first stage is to raise awareness among potential replicators that a given practice exists. For this, only succinct information about the practice is needed. In a second stage, the potential replicators will seek detailed information about the practice, and a more detailed documentation will be required. Because even the most detailed documentation cannot anticipate all the potential questions, a third stage will require some interactive information exchange between potential replicators and the persons with thorough knowledge of the practice, often the initiator. Finally, after knowing all the details, the potential replicator may need to build up his or her capacity to implement the practice.

Implementing these practices also require certain laws, regulations and business practices that are beyond the scope of the local actors. This is called an enabling environment. Some of these conditions are very specific to each case: for instance, the water tariffs in many countries are such that the experience of Colombo described here cannot be applied at all. But many aspects of the enabling environment are more general and apply to a broad range of local initiatives, like decentralization policies that will allow local actors more autonomy and responsibility.

The case studies compiled here have been selected because they provide lessons that can be useful for institutions facing similar problems. By publicizing them we expect to offer a reasonably complete account of how they work. The documentations have also tried to capture the essential elements of the regulatory environment for each practice.

## **F. A note on documentation methodology**

The first four of the case studies presented were documented in the context of the UNESCAP project on Pro-Poor Public Private Partnerships. A component of this project was devoted to the documentation and dissemination of innovative practices in public private partnerships that were bringing basic services to the poor. The fifth case study was documented as an input into the recent UNESCAP publication “A Future Within Reach: Reshaping Institutions in a Region of Disparities to Meet the Millennium Development Goals in Asia and the Pacific” (2005).

The project on Pro-Poor Public Private Partnerships developed guidelines for documenting practices in the form of a questionnaire that the documenter should complete, with the intention to force the documenter to cover all the aspects of the practice that were considered important from the point of view of the potential replication of the practice.

Each case study was documented by a different person. This publication has tried to adapt the material from each document into a common structure while respecting the opinions of each individual author.

The guidelines for the documentation of good practices can be downloaded from the UNESCAP website at <http://www.unescap.org/pdd/prs/ProjectActivities/Ongoing/PPPPP/guidelines.asp>

## II. Solid Waste Management in Bangladesh

### A. Introduction

This practice deals with solid waste management in slum and low- and middle-income communities of Dhaka city (Bangladesh). It also promotes the use of solid waste for compost and enriched compost in rural Bangladesh to improve the fast depleting topsoil fertility. It was launched in September 1998, by a local NGO “Waste Concern” and serves 30,000 people in Dhaka city and another 100,000 people in 14 other cities and towns in Bangladesh.

It works in the form of a partnership: the government makes land available free of charge for waste management; Waste Concern collects, separates and turns solid waste into organic compost; community members pay a nominal fee for the collection of the solid waste and oversee the activities in their neighborhoods; a private business markets the organic compost.

There are two important features that made this practice innovative. Firstly, the formal partnership with a private-sector company for enrichment of the compost with nutrients and its subsequent distribution and marketing is the most important, innovative feature of this practice. Sale proceeds of the compost make up 70 per cent of the total revenue of the project. Secondly, communities participate in the house-to-house collection service and share the cost of the waste collection by paying a monthly fee based on their affordability. Community contributions in the form of a user charge account for 30 per cent of the project revenue, thus making the project financially viable. The success of this community-based programme depends largely on identifying and addressing the community’s needs, while the sustainability of the project depends on their involvement in the cost-recovery/cost-sharing process.

### B. Background

Dhaka, the capital of Bangladesh, is one of the fastest growing mega cities in the world. The city, its municipalities and its adjoining urban areas have an annual population growth rate of 6.6 per cent (BBS, 1997) and a population of over of 10 million (BBS, 2000). Over half the population of Dhaka (55 per cent) is poor, and many live in slums and squatter settlements with no access to municipal sanitation services (GoB-ADB, 1996). The city generates about 3,500 tons of solid waste each day, 45 per cent of which is collected and disposed of by the municipality (Enayetullah, 1995). Of the mainly inorganic, recyclable materials, 15 per cent is collected by some 120,000 people from the informal sector; including waste pickers, popularly known as *tokais* (Sinha, 1993). Although *tokais* extract most of the readily available material from the waste stream, there remains considerable value in what they leave behind. This value lies in the organic portion of the solid waste, which constitutes about 80 per cent of the total generated waste, if converted into compost.

The waste that is not collected by the municipality or removed by the *tokais* is left to rot in the heat and humidity of the city's open spaces. The resulting stench, rodents, and clogged drains pose a serious health risk to Dhaka's residents. With an increase in population and horizontal expansion of the city, it is becoming very difficult to locate a waste disposal site within easy access of the city. Consequently long haulage is necessary, resulting in high transportation costs. Increases in solid waste generation in

future will aggravate solid waste disposal problem, unless the volume of the waste is reduced substantially.

Recycling of solid waste has long been an income-earning enterprise for many urban poor. From the perspective of the municipality, organic waste recycling through composting not only reduces disposal costs and prolongs the life span of disposal sites. It also reduces adverse environmental impacts caused by landfill sites, as organic waste is mainly responsible for leacher contamination and methane problems. Involving the population in the use of compost promotes awareness of waste resource recovery while composting activities can also create employment and generate income.

Experience has shown that in developing countries large centralized and highly mechanized composting plants often fail to reach their targets and are abandoned due to high operational, transport and maintenance costs. In many cases, small-scale decentralized community-based composting plants are a more suitable option for treating municipal solid waste as they reduce transport costs, make use of low-cost technologies, based mainly on manual labour, and minimize problems and difficulties encountered with backyard composting. Processing of urban solid waste into compost in a decentralized manner had long been an unexplored sector in Bangladesh.

At the same time, the demand for organic fertilizer (coming from compost) is expected the rise. During the Green Revolution of the 1970s, excessive use of chemical fertilizers depleted the topsoil of organic nutrients in many parts of rural Bangladesh. This caused drastic reductions in crop production. Organic matter is now estimated at less than three per cent (the required critical level) in 83 per cent of the cultivable land (UNEP, 2001). In an attempt to meet previous production levels, farmers scatter an estimated 3.5 million tonnes of chemical fertilizer every year, further breaking down the natural ecology of the soil. From the perspective of food security, use of compost produced from city waste in agriculture can increase crop production and at the same time restore organic nutrients to the soil.

Various factors can create an unique opportunity for partnerships in solid waste management: limited local government budgets, a community willingness to pay for solid waste collection services, private-sector companies that are able to market compost and recyclables, the availability of a proven technology to make compost out of organic waste, and a demand for organic fertilizer. Partnerships can optimize the application of available public and private resources; by working together, local governments, businesses and communities can pool their resources, expertise and unique approaches to solve and overcome the waste management problem.

### **C. Initiating the practice**

Waste Concern's decentralized composting project in Dhaka was motivated by two principal observations. First, like many other cities of the developing world, more than fifty per cent of the waste generated in Dhaka is disposed of in environmentally unsound ways. Second, a large informal sector industry exists in Dhaka that recovers and recycles solid waste. The existence of this recycling industry demonstrates that waste contains considerable value.

At the bottom of this informal sector recycling activity is a small brigade of scavengers, or *tokais*. *Tokais* search for recyclable materials in the waste stream, mainly collecting reusable and recyclable materials. These materials are transported and sold to entrepreneurs throughout the city who arrange for the materials to be sorted, cleaned and

resold through a marketing chain that ends at several recycling factories. Although *tokais* extract most of the readily available inorganic recyclable from the waste stream, there appears to be considerable value in what they leave behind. This value lies in the organic (biodegradable) portion of the waste, which can be converted into compost - an organic fertilizer that improves the ability of soil to retain water and resist soil erosion. The presence of a high percentage of organic matter in the waste suggests that composting presents a viable option of waste disposal.

With these assumptions, Waste Concern initiated the first pilot project in the Mirpur area, a middle-income neighborhood of Dhaka. The project was initiated without any support from public or international agencies. A small piece of vacant land in the Mirpur Housing Estate was made available to Waste Concern by the Lions' Club (Dhaka North) for a composting plant. The Lions' Club initially allowed the plant to operate for a three-month period in 1995, so that it could observe the activity. The plant is still in full operation today with the support of the Lions' Club.

The prime goal of the pilot project was to explore the technical and commercial feasibility of the labour-intensive aerobic composting technique. Under the project, households paid a monthly fee for the collection of the waste. The collected waste was composted at the neighborhood-based compost plant run by Waste Concern, and the resulting compost from the plant was marketed by a private-sector company. Until 1998, the project was a community-NGO-private sector partnership, but without a public-sector partner, it was difficult to replicate the project in other areas, because of the scarcity of land for the composting plant.

Waste Concern's innovative approach in its Mirpur project encouraged the Ministry of Environment and Forest (MoEF) to select it as a sub-implementing agency for its project "Community-Based Urban Solid Waste Management in Dhaka", which was a component of the UNDP-assisted Sustainable Environment Management Programme (SEMP). Waste Concern was selected due to its proven track record with community-based solid waste management in Bangladesh. As part of the UNDP project, Waste Concern was required to initiate four new community-based waste management projects using public-private-community partnerships.

Waste Concern identified several locations in Dhaka City where vacant land was available near communities to implement the project. It approached the Public Works Department (PWD), which owned the land, to request permission to use the land for the project. After several meetings and discussions, the PWD eventually decided to join the project and the partnership.

The duration of the contract between the PWD and Waste Concern was initially for one year, with a provision for the renewal of the agreement with mutual consent of both parties. As the concept of partnership was new, the PWD wanted to observe the activities for one year before signing a long-term agreement. The Partnership Agreement was signed in August 1999. After seeing the impact of the project, the PWD requested Waste Concern to initiate similar projects in other communities and it extended its agreement with Waste Control until December 2005.

Prior to implementation, Waste Concern organized several meetings to receive feedback from the community about the project. All residents of the communities were invited to the meeting where Waste Concern made several presentations about the project activities and the role of the community and inquired about the willingness of the community to share the cost of the project. Communities that expressed an interest in participating in

the project were selected for the intervention. The consultation process continued during the implementation, with community meetings held at convenient times for all the residents. Apart from community meetings, Waste Concern organized workshops and training programmes at suitable times agreed by the community.

## **D. Partnership**

This practice is a partnership between a government agency that provided the land, a NGO who operates the system with the community, and a private company that markets the compost.

### **1. Roles and responsibilities of partners**

The communities in low- and middle-income areas are responsible for monitoring of the house-to-house waste collection system and for contributions towards its operational cost. The communities also appoint staff for waste collection and composting.

The NGO Waste Concern mediates between the DCC, other public agencies and the private sector. It assists the communities to form a waste management committee called the “green force”. It also provides technical assistance for the small-scale composting units (1-5 ton/day capacity) and provides training to communities in the management, operation and maintenance of the services established. Moreover, it assists communities to market the compost produced in the community-based plants through different outlets.

#### **BOX 2.1: Details of practice partners**

Waste Concern is a non-governmental organization established in 1994. It works in close partnership with the government, the private sector and local communities to improve the environment. For more than a decade, it has operated as Bangladesh’s only specialized organization working on waste management.. Presently, Waste Concern is implementing 20 projects on waste management, composting and environmental management in several cities and towns in Bangladesh in co-operation with the government and international agencies such as UNDP and UNICEF, and the private sector.

- The Public Works Department (PWD) is part of the Ministry of Housing and Public Works. It is responsible for construction and maintenance of all public buildings.
- The Dhaka City Corporation (DCC) is the municipal authority of Dhaka. It is responsible for construction and maintenance of urban services within its jurisdiction area. DCC is under the Ministry of Local Government, Rural Development and Cooperatives.
- Map Agro Industries is a private company that specializes in marketing and distribution of fertilizer. It also has a factory for enrichment of compost.
- The United Nations Development Program (UNDP) is an international development agency and part of United Nations system.
- The Ministry of Environment and Forest (MoEF) is the key government ministry responsible for environmental protection and pollution control. It is also responsible for preparation of policy guidelines on environmental protection.

The Ministry of Environment and Forest (MoEF) is responsible for the coordination of the programme and provides strategic support on behalf of the government. It is the executing agency of the project. The Dhaka City Corporation (DCC) and the Public Works Department (PWD) give permission for the establishment of the composting plant at sites located on their land and provide additional support such as the provision of water supply and electricity. UNDP, as a donor agency, is providing start-up funds for the establishment of community-based composting units integrated with house-to-house waste collection. Map Agro Industries, along with its sister company Alpha Agro, agreed to purchase all the compost produced in the community composting units and market it through their country-wide distribution network in rural areas.

## 2. Legal arrangements

There is a formal Partnership Agreement between the Public Works Department (PWD) and Waste Concern to implement the project. As per the agreement, the PWD accorded legal permission to use its land and provided logistical support such as water and electricity connections to establish the community-based composting plants. Waste Concern is a sub-implementing agency of the project on behalf of the Ministry of Environment and Forest (MoEF) with financial support of UNDP.

According to the Partnership Agreement, Waste Concern initiates and operates the project in partnership with local communities, trains community groups in different aspects of operation and maintenance of the composting plant and recycling, and assists in the marketing of the compost. After community mobilization and training for one year, Waste Concern informally hands over the project to the community. After transfer of the project informally to community ownership, Waste Concern monitors the project for the next three to four years.

The duration of the contract between PWD and Waste Concern was initially for one year with the provision of closing the activity with seven days prior notice if the work was not satisfactory. However, there is a provision in the agreement for renewal of the agreement with mutual consent of both parties. The Partnership Agreement was signed in August 1999. PWD already requested Waste Concern initiate similar projects in other communities and extended the agreement until December 2005.

The DCC, the formal agency responsible for waste management, was initially reluctant to participate in the partnership programme. Although DCC Ordinance 1983 (revised in 1994) clearly states that they can sponsor and support community-based development projects, it took more than a year to convince the DCC to participate and to sign the Partnership Agreement. The DCC was unsure of the legal implications of a partnership approach and was hesitant to sign the agreement as it was concerned that the land to be allocated for composting might be used for another purpose. Eventually, the MoEF and UNDP intervened to convince the DCC of the benefits of the partnership. This experience demonstrates that a clear supportive policy decision is required by the government to promote public-private-community partnerships. Since the signing of the agreement, the DCC has been helpful and accommodative. The Partnership Agreement is similar to the one with the PWD, and all the clauses are the same.

There is separate agreement between each community-based composting plant and Waste Concern and the public agency owning the land i.e. the PWD or the DCC. The duration of the agreement is for the entire project period, although initially it was for one year.

There is a formal written agreement between Map Agro Industries and Waste Concern for the former to market the compost produced in different community-based composting plants. According to the agreement, Map Agro Industries purchases all the raw compost produced in the composting units by paying in cash and marketing it in rural areas through their countrywide distribution network. Waste Concern is ensuring the quality of compost as required by Map Agro. This agreement is vital for the sustainability of the project.

Recently due to the demand generated for enriched compost, Map Agro has requested Waste Concern to install more community-based compost plants in Bangladesh to meet the growing demand for compost. Initially the agreement between Waste Concern and Map Agro was to market 500 tons of compost per year, but in 2004 it was extended to 40,000 tons/year.

There is no written agreement between Waste Concern and the communities. However, the agreements between Waste Concern and PWD and DCC contain a well-defined role for the communities. Before signing the agreements, the contents were discussed in a tripartite meeting between the representatives of Waste Concern, the public agency and the community, and endorsed by all parties. The agreement with the public agency authorizes Waste Concern to levy user fees for house-to-house waste collection to cover a part of the operational cost. The agreement also stipulates that the user fee shall be fixed in consultation with the community, and that the project should be transferred to community ownership after the expiry of the agreement period.

All income and expenditures from the practice are annually audited by the government and the donor agency, as well as by Waste Concern. Moreover, quarterly progress reports are submitted to the government as well as to UNDP. The quarterly progress report consists of statements of income and expenditures from the project, problems encountered during the period as well as steps taken to resolve them. Apart from progress report, an annual evaluation report is submitted to the government and UNDP. All income and expenditures as well as other technical information regarding the practice are kept on the project sites as well as at Waste Concern's office, so that stakeholders can access it easily.

After a formal hand-over of the project to community ownership, Waste Concern will continue to monitor the activities of the communities. Moreover, Waste Concern intends to continue the financial auditing of each plant annually and to submit the report to the public agency providing the land as well as to the MoEF. The costs involved in auditing are met from the net earnings of the project.

**Table 2.1. Risk sharing and management among partners**

<b>Practice Stage</b>	<b>Principal Risks</b>	<b>Liability for Risk</b>	<b>Measures to Minimize and Manage Risk</b>
	Public sector not willing to provide land for the project.	100% Waste Concern	Meetings were organized and technical presentation made to convince public agencies.
	Land given to the project not used for composting plant and used for other purpose.	100% Public Agency (PWD/DCC)	Very flexible agreement was signed, giving power to public agency to close the project, if land was used for any purpose other than compost plant.
<b>Operational</b>	Composting process not working properly Creating smell problem	100% cost of construction risk to UNDP  100% composting process related risk to Waste Concern	Aerobic process is used in composting the waste; it emits very little smell.  Hands-on training provided to compost plant workers.  Training given to workers to ensure proper housekeeping of composting plant.  Strict monitoring of composting process by Waste Concern
	Community not participating in waste collection programme	100% Waste Concern	Community awareness programme conducted. Leaflets and awareness raising materials distributed. Community meetings organized and community group "Green Force" formed to monitor the project.

**Table 2.1. Risk sharing and management among partners (continued)**

Practice Stage	Principal Risks	Liability for Risk	Measures to Minimize and Manage Risk
Post-operational	Compost not sold from the plants	100% Waste Concern	Signed agreement with private sector to market the compost.  Quality of compost monitored and tested  Signed partnership agreement with small companies to market compost.  Compost also sold to plant nurseries in the city.  Demonstration farming using enriched compost with nutrients conducted.
	Compost being not sold by private sector to farmers	100% Private Sector	Selling of compost on credit to farmers.  Compost application guideline provided to farmers.

## **E. Operations**

Waste Concern adopted a process of nine major steps to implement the practice. It takes one year to complete all the steps. The steps are as follows:

### **Step 1: Work permission/agreement with public agency**

Before implementation of the project in a new community, a formal Partnership Agreement is signed between the public agency (DCC or PWD) and Waste Concern. The agreement clearly defines the roles and responsibilities of all partners.

### **Step 2: Base line survey**

After the agreement is signed, Waste Concern conducts a baseline survey. It collects data about the socio-economic conditions of the community, and the situation of sanitation and waste management. Moreover, information is gathered about problems faced by the residents in disposing waste and their willingness to participate in and contribute to a waste management improvement programme.

### **Step 3: Community mobilization and formation community of groups**

After completion of the base line survey, Waste Concern organizes meetings in the community. If the community shows interest and confirms its willingness to participate in the programme, a Waste Concern representative clarifies the responsibilities and roles of the local community. If the community agrees with the terms, the community is selected for the intervention and community groups called “Green Force” are formed. Responsibilities of the “Green Force” include acting as a project watchdog, monitoring the work of waste collectors and composting activities, overseeing the monthly fee collection, and awareness raising on proper waste management in the community.

### **Step 4: Capacity building**

After successful mobilization of the community and the formation of community groups, Waste Concern provides hands-on training to selected members of the community group on waste separation, collection, composting and marketing of recyclable material and compost. When selecting trainees from the communities for the operation of the

composting plant, special emphasis is given to the participation of poor women in the community.

#### **Step 5: Setup of the composting plant**

A simple, low-cost shed is built for the sorting, composting and maturing units of the plant, along with drainage, water supply and electricity facilities.

#### **Step 6: House-to-house waste collection**

The community groups trained by Waste Concern collect all the waste (both organic and inorganic) from the households. Organic waste is composted within the community-based composting plants, while plant workers sell the inorganic waste of value to the junk dealers. Inorganic waste, which cannot be recycled, is taken by the DCC truck for disposal at the landfill site.

Source separation of waste into dry, wet and toxic waste is promoted in this phase with the help of a community awareness programme. Waste Concern developed posters, leaflets and T-shirts and organized workshop and informal meetings, etc. to promote source separation. Modified rickshaw vans were introduced for house-to-house waste collection, and for this service the households pay on average Tk.10 to 20 (\$ 0.18 to 0.36).

Income from solid waste collection is spent on the salary of part-time van drivers and waste collectors. It has been found that after paying salary, operation, and maintenance cost, there is a net monthly saving from the collection service. The house-to-house waste collection system is thus self-financing.

#### **Step 7: Composting process**

Composting requires 40 days for decomposition and another 10-15 days for maturing. After maturing, the compost is screened for different grades and packed for marketing. At present, 500-600 kg of compost is produced every day by processing two-three tons of solid waste.

#### **Step 8: Marketing of the compost**

Unlike in many other countries, a good market for compost exists in Bangladesh. Waste Concern assists communities to sell their compost to outlets such as fertilizer marketing companies and nurseries at prices ranging from Tk. 2.5 to Tk. 5.0 per kg (\$ 5-10 cents). The quality of the compost is monitored in the laboratory of Soil Resources Development Institute of the Government of Bangladesh as well as in Waste Concern's own laboratory. Compost produced by Waste Concern has good NPK value. If the composting process is not monitored properly, the quality of the product may deteriorate and this can hinder the marketing of the product.

Map Agro, a company specialized in fertilizers, purchases the bulk of the compost produced by Waste Concern, enriches it, and markets the product to areas 400-500 km away from the plant. This indicates that there is a need for involvement of specialized fertilizer marketing companies to market the product and also to enrich compost with nutrient to make it attractive and cost-effective to the farmers.

#### **Step 9: Handing over the plant to the community**

After establishment of the plant and one year of training and demonstration, Waste Concern hands over the plant to community groups or to the public agency owning the

land. However, Waste Concern continues to monitor the project for the next three to four years

When Waste Concern transfer the plant to community ownership, the organization responsible for the use of the land and the operation of the compost plant becomes the Green Force. A question may arise regarding the legal status of the Green Force. Transfer to community ownership and management is difficult unless public agencies accept Green Force as the legal successor to Waste Concern. Moreover, there is an agreement between Waste Concern and Map Agro Ltd for the sale of the compost. According to the agreement, Waste Concern is to ensure the quality of the compost, and to do so, Waste Concern must have access to laboratory facilities. These issues need to be settled before a plant can be transferred to a community.

Relations between the project partners have developed steadily over time, as the practice progressed and the benefits gained by each partners became clear. Moreover, the hesitation and lack of trust among the partners during the initial years of the project have dissipated, as the partners obtained tangible gains from the project. Many local communities were initially reluctant to pay for waste collection and were skeptical about composting within their neighbourhood. They are now regularly contributing to the house-to-house waste collection and monitoring the day-to-day operations of the composting process. The projects have thus become self-sustainable.

Since its inception, the practice has not faced any major operational problems, because of the Green Force, which comprises women, students and retired persons from each community served by the practice. In case the Green Force is unable to resolve a problem, Waste Concern acts an intermediary and a facilitator; it intervenes and resolves the outstanding matter.

**Table 2.2: Typical Time Frame for Different Stages of the Project**

Item/ Months	1	2	3	4	5	6	7	8	9	10	11	12
Agreement with public agency												
Baseline survey												
Community mobilization and formation of community groups												
Capacity building of community groups												
Installation of compost plant												
House-to-house waste collection												
Operation of composting plant												
Marketing of compost												
Handing over of plant to the community												

## F. Financial arrangements<sup>1</sup>

The total cost of the installation of the community-based composting units in five areas of Dhaka City was \$ 45,595 (average budget per plant of \$ 9,118). The capital cost of the project was financed by UNDP through the MoEF. Capital costs included construction of composting plants and purchase of rickshaw vans for collection of the waste. The average cost of construction for a plant with a capacity of three ton/day and the purchase of

<sup>1</sup> Exchange rate used is \$1=54 taka (Tk)

rickshaw vans for the collection of the waste was \$ 8,800. Apart from the financial support from UNDP for the capital cost of the project, the PWD and the DCC provided support by allocating land for construction of the compost plants. Moreover, the private-sector partner invested Tk 2.5 million in a compost enrichment plant to enrich the compost with nutrients as required by the farmers.

The operational costs of the project include the salary of workers for waste collection and composting. It also includes the salary of the plant manager, utility bills and raw material costs. The annual average operational cost of compost plant with a three-ton/day capacity is \$ 10,208. UNDP does not provide funds for the operational cost of the project. There are two sources of revenue for the project. First, there is the income from the sale of the compost. From a compost plant with a three-ton capacity, \$ 10,139 worth of compost is sold annually. Second, income from house-to-house waste collection fees amounts to \$ 4,667 per annum. Net earnings from the project per year come to \$ 4,598.

A portion of the net earnings from the project (\$ 2,500) is used by Waste Concern for testing of the compost at the government's laboratory and for its monitoring fee. The balance (\$ 2,098) is deposited in a separate account for each community maintained by Waste Concern. This amount is used for repair and maintenance of compost plants, rickshaw vans, uniforms for workers and community greening programmes as required. The expenditures incurred in this regard are approved and endorsed jointly by the Green Force and Waste Concern. After the formal transfer of the project to community ownership, the net earnings will be maintained and used by the community.

## **G. Outcomes**

The practice has been able to achieve its objective of improving the urban environment and creating job opportunities for the poor through waste recycling. The main factor contributing to the achievements of the project's objectives has been the linking of all partners in a 'benefit loop' through facilitation by Waste Concern.

Most composting projects in the past failed to achieve their targets due to lack of marketing of compost and support by public agencies to provide land to establish such plants. However, in this practice, establishing a successful partnership with the private sector for marketing of the compost made a big difference to the sustainability of the project, as 70 per cent of the revenue of the project comes from the sale of compost.

The direct beneficiaries, who include lower- and middle-income people, plant workers and farmers have expressed their satisfaction with the performance of the project. Discussion with the community members and workers reports the following outcomes:

**Convenience:** The participants, especially women, found house-to-house waste collection service very convenient. Most participants said they previously had to travel long distances to dispose of their solid waste. Some used to throw their waste in roadside drains or vacant lots to avoid the travel.

**Increases in property value:** Some participants reported that before the project they had been facing problems renting out their houses as community bins in front of their houses were not regularly cleared by the municipal authority. With the introduction of the house-to-house waste collection and resource recovery programme, the neighborhood had become much cleaner.

**Increases in income and time saving:** Focus group discussion with urban poor women working in the project revealed that they were satisfied with the working environment.

Most of the workers reported that before joining the composting project, they worked largely as domestic help and in garment factories, with long working hours, poor pay and no holidays. Working in the composting project, they can earn higher wages and have more time for household work and their families. Moreover, apart from their monthly salary, they can earn extra income by selling recyclables.

The practice has reduced municipal expenditures and is saving landfill area. The annual saving in the landfill area is 0.935 cubic meter per ton of waste, while the cost saving per ton is Tk. 634,461(\$ 11,749).

Data show that crops grown using enriched compost have higher yields and better colour and taste. Preliminary data show an increase in yields by 25-30 per cent per hectare using enriched compost compared with crops using chemical fertilizer. Moreover, the price of enriched compost is lower than that of chemical fertilizer. Available data also shows that the use of enriched compost reduces the need for chemical fertilizer by up to 30 per cent.

The project has made judicious use of available resources. The total fixed cost invested in the Mirpur practice, which can process three tons of waste per day with an annual capacity of 1,095 tons, was \$ 8,800. At present, the DCC spends \$ 38 on average to dispose of one ton of solid waste. Without this practice, the total cost to disposing of 1,095 tons of solid waste from the concerned neighbourhoods would be \$ 41,610 per year. Because of this practice, the DCC has to collect and dispose of only 165 tons of waste in stead of 1095 tons of waste per year, or 15 per cent of the total waste, while the rest is composted and recycled within the community. This has led to a substantial reduction in the solid waste management cost of the neighborhood to \$ 6,241 per year - a reduction to DCC expenditure of 85 per cent.

The project is financially viable, excluding the land cost, and the pay back period of the project is calculated at 23 months.

## **H. Addressing the needs of the poor**

In this practice, the poor are directly involved in implementation of the project as well as indirectly in the design phase of the practice. The poor people, who include destitute and hard-core poor, benefit as workers, while the moderately poor benefit as customers.

Urban poor living near the project areas are employed as plant workers in the practice. The project is gender balanced, with men involved in the collection of waste from the community using rickshaw van, while women are engaged in the composting process which involves sorting and piling of organic waste in the windrows, sieving the finished compost, and weighing and packing it into sacks. Overall, 70 per cent of the employees are women; they are allowed to bring their children to work and there is a separate toilet and bathing facility for them. One of the major goals of the project, to create employment opportunities, especially women in the waste recycling sector, has therefore been achieved.

In order to address the needs of the poor, the practice used pro-poor strategies such as setting low user fees for house-to-house waste collection. The fee is set at a maximum of Tk.5/month/household for lower income groups residing near the project area, while for the middle and upper income group the waste collection fee is higher.

Free monthly health check-ups are provided for poor people working in the projects

### Box 2.3. Poverty in Dhaka

The poor are the people who cannot afford to meet the basic needs with their own income (Islam, 1996). Basic needs include food or nutrition, clothing, primary health care, education and shelter.

A GOB-ADB study (1996) on urban poor measured the poverty line on the basis of income/expenditure related to daily normative calorie intake plus cost of non-food items and services (up to 25% of the food expenditure). The study determined that those households below a monthly income of Tk.3,500 (\$ 64.81) could be defined as “absolute poor” and those households with income below Tk. 2,500 (\$ 46.29) as “hard-core poor.”

Income Distribution of Households in Dhaka

Income Group	Income Range (per month)	Percentage of Households	Cumulative Percentage of Households
Destitute	Tk. 0-750 (\$ 0- 13.89)	2	2
Hard-core Poor	Tk.751-2,100 (\$ 13.90-38.89)	18	20
Moderately Poor	Tk.2,101-4,000 (\$ 38.89-74.04)	35	55
Lower middle	Tk.4,001-8,000 (\$ 74.09-148.15)	20	75
Middle	Tk.8,001-28,000 (\$ 148.16-518.52)	20	95
High	Tk.28,001-plus ( \$ 518.53)	5	100

For a study conducted by WEDC (2002), workers said that they preferred this work over previous or alternative forms of employment for a number of reasons, including:

- There is greater flexibility (particularly for bringing children to work) than in other jobs such as the garments factories where they could not keep their children.
- The management is very reasonable, in contrast to the management in the garment industry where some women were not allowed to use a toilet frequently, and were often beaten.
- Working hours are better, unlike domestic or garment work which often requires working and traveling at night-time, making looking after a family difficult.
- The working environment is fairly safe.
- Workers did not have to provide a bribe to gain employment, unlike sweeper jobs in Dhaka City Corporation.

### **Box 2.2. The story of a female working at a composting plant**

Maksuda, a 32-year woman, has been working in a community-based composting plant located in Mirpur area of Dhaka city for the last six years. Previously, she worked in a garment factory. She left the factory because she had to work long hours with no holiday; the supervisor always misbehaved and her salary was very low. Moreover, she had to work in a standing position in the garment factory for 11-12 hours per day. Sometimes, when there was no work in the garment factory, she had to wait for three months without salary, which was an acute hardship for her family. Now, working in the composting plant, she has a weekly holiday, has fixed hours of duty with rest time and has also access to toilet and bathing facilities. She can now devote more time to her family and children and is earning more money.

A survey conducted by Waste Concern in the Mirpur project area showed that out of 20 men and women working in the project, only three are now considered hardcore poor, having a monthly household income of less than TK. 2,100. The rest are moderately poor, while some are now even in the lower-middle-income group. Before the project, all the employees were either absolute or hardcore poor.

#### **I. Sustainability**

The financial data shows that the practice is financially sustainable, if land is provided free of cost by a public agency. In this practice, the DCC and PWD provided land free of cost. For composting plant with a three-ton capacity, the total fixed cost is \$ 8,800 (without the land cost), operational costs per year are \$ 10,208, while the earnings per year are \$ 14,806. Net earnings per year from this practice (total earnings minus total operational costs) amount to \$ 4,598. The pay back period of the practice is calculated at 23 month.

The practice is also socially sustainable: It was generally believed that only sweeper communities work with waste. However, most of the women workers engaged in the plants previously worked in garment factories and as domestic help, which has long working hour. In Waste Concern's plant they have to work for eight hours a day with a weekly holiday. All workers expressed their preference for this work over previous or alternative forms of employment. Moreover, the community is paying for the service charge for the house-to-house waste collection regularly in all project locations and in this way, they achieve sense of ownership of this practice. This confirms the social acceptability of the project. .

Its operations are also environmentally sustainable. From a technical point of view, the composting method and unit can be regarded as successful because the plant has been running satisfactorily since 1995, and has been replicated in other communities in Dhaka as well as in other cities and towns of Bangladesh. The technology used for composting is labour intensive and manual and the plant is very simple to operate and maintain. The compost produced by this method proves to be of very good quality (N= 2.10, P= 4.0, K = 2.60). Data from the community-based composting site reveal that 250 kg of compost can be produced from one ton of organic waste and that only 15 per cent of rejects are to be transported to the landfill site. This indicates that by using this method, local governments can reduce their waste management costs substantially and at the same time increase the life of landfill sites. Moreover, the use of this technology has the following advantages:

- The operation and maintenance can be easily undertaken with local manpower
- The composting plant can be located in existing urban areas

- The practice enhances public health and sanitation awareness, and upgrades the economic well being of the community
- The practice creates job opportunities for the urban poor
- By using the compost as well as the enriched compost, a 30-50 per cent increase in crop production has been achieved

All the partners involved in the project are joined in a closed benefit loop. For instance, the practice has lowered the waste management cost of the public agencies thereby making financial savings for them. For communities, the practice has resulted in cleaner neighbourhoods, leading to increased property values and a better living environment and the private sector is making profits by marketing an environmentally friendly product i.e. eco-fertilizer. The practice has also provided a new opportunity for employment of the poor.

In order to improve the practice's sustainability, there is a need for a well-defined and clear policy for the public agencies to make land easily available to NGOs, the private sector or communities interested to run this kind of project without an intermediary. At present, there is no such provision in the Municipal Ordinance to do so. Moreover, municipalities could create a revolving community fund for waste management projects. In this project, the initial seed money to establish the composting plants was given by the UNDP.

In the case of communities interested in forming a partnership with public agencies for the operation of community-based projects, public agencies should accept community groups (such as the Green Force) as a legal party to the agreement. To do so, Green Force should also register with the Social Welfare Department to obtain legal status.

There is also a need to establish quality standards for operating and managing community-based composting projects as well as compost quality standards for marketing of the product.

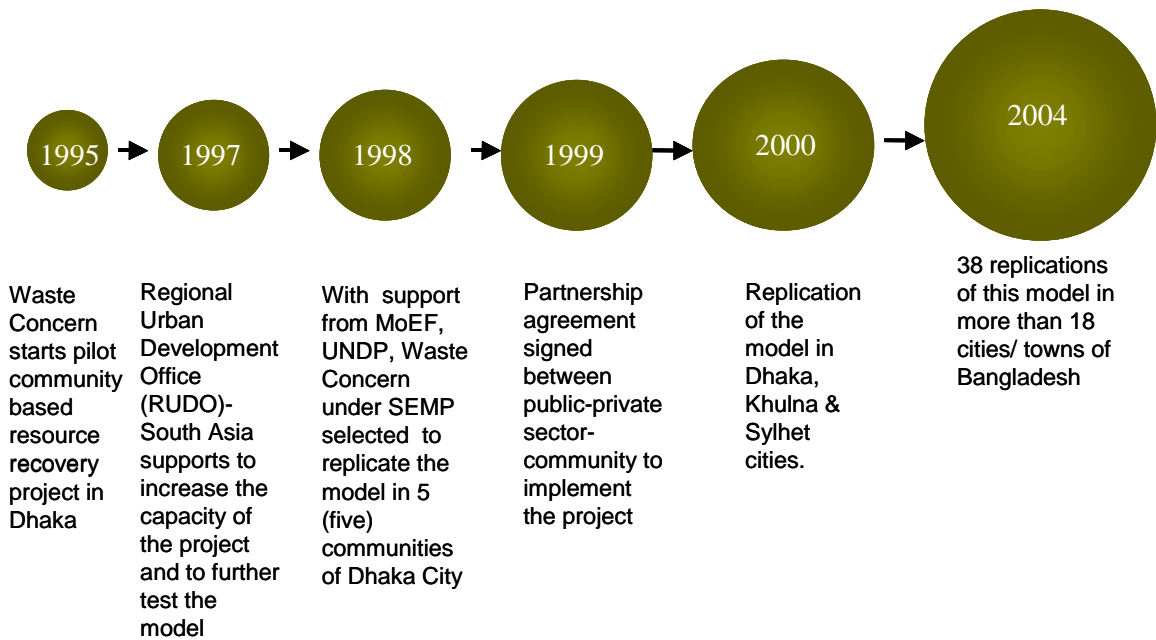
## **J. Replication and up-scaling**

As the practice is low cost and utilizes locally available technology, it is easily replicable and suits the local environment. The only constraint is the availability of land. Analysis of the project in Dhaka shows that this type of project is financially viable if land is provided free or at nominal rent by the public agency. In smaller cities, where land is not as expensive as in Dhaka, the project could be viable without this subsidy.

The practice can be widely adopted as a model for solid waste management, from community level to city level. In residential areas, where land is available, it can be up-scaled up to a capacity of 20 tons/day. However, in cases where land is not available within the community, the practice can be replicated in landfills on a much bigger scale (500-700 tons/day capacity). To process the waste, which is predominantly organic in nature, Waste Concern has initiated a project to establish a composting plant with a capacity of 700-tons/day in Dhaka at the landfill site of the DCC, using the same model.

The practice has already been replicated in five communities of Dhaka city and 18 other localities in Bangladesh. In a majority of these cases, Map Agro Industries is purchasing the compost.

**Figure 2.1: Different Phases of the Project**



The practice can be replicated anywhere in the world, provided land is available for the establishment of the community-based composting plant and there is a willingness by private-sector fertilizer companies to market the product. The composting method needs adaptation to local conditions. As of 2004, the practice is being replicated in Sri Lanka and Viet Nam through a project of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP).

The project has good prospects for employment generation in the informal sector and at the same time has become an important tool for poverty alleviation. A composting plant with a capacity of three-ton per day requires 20 workers: 6 for the collection of the waste and 14 for composting). Considering that 3,000 tonnes of waste is generated per day in Dhaka of which 80 per cent is organic, the compostable portion amounts to 2,400 ton/day. Composting of all organic waste in Dhaka can generate employment for about 16,000 urban poor, especially women, and at least 90,000 new jobs for urban poor in the whole of Bangladesh.

Realization of the full potential of this kind of project can only be achieved, if the Government or municipal authorities provide the following types of support:

- Land should be provided free of cost or at a nominal rate to entrepreneurs interested in implementing the project
- Loans to start the project should be provided on a soft term
- Training and technical advice should be provided to entrepreneurs or CBOs/NGOs interested in replicating the model
- Involvement of a specialized fertilizer company in the marketing of compost is required
- Enrichment of the compost with necessary nutrients makes the compost more attractive, affordable and effective to the farmers
- Demonstration farming is necessary to show the tangible benefits of using compost in agriculture

## **K. Conclusions**

This practice shows the advantages of a partnership to serve the poor and service deficient settlements. Successful Partnership will only be successful if appropriate technological choices are made and in many instances, the most appropriate choice may represent a challenge to certain technological dogmas. In this case, a low-cost, labour intensive technology proved the most successful option. The practice has shown that resource recovery from waste does not always require an expensive centralized mechanical plant.. Solid waste can be recycled in partnership with community groups in decentralized plants, using low cost and labor intensive techniques;

Community mobilization and capacity building have played a major role in the success of the project. There is, however, also need for capacity building of utility agencies for successful public-private-community partnership;

Low-income communities have the willingness to pay for reliable and efficient services, if they are made aware of the benefits of what is provided to them. The presence of intermediaries such as NGOs is required to reach the poor and service-deficient neighbourhoods.

## **L. Documentation**

In order to prepare this documentation, focus group discussions were conducted in selected project areas to assess the impact of the practice and know the reactions of local people. Moreover, a brief questionnaire survey was conducted among the compost plant workers. Discussions were also held with Mr. A.H. Md. Maqssod Sinha of Waste Concern, Dr. Zainal Abedin of SRDI and Mr. Rafiqul Islam of Alpha Agro. The documentation was carried out in August 2004.

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[www.sandec.ch/SolidWaste/Documents/01-Composting/01composting-dhaka-ISWA2002.pdf](http://www.sandec.ch/SolidWaste/Documents/01-Composting/01composting-dhaka-ISWA2002.pdf)

[http://www.sandec.ch/SolidWaste/Documents/01-Composting/01Assessment\\_Dhaka-IR2001.pdf](http://www.sandec.ch/SolidWaste/Documents/01-Composting/01Assessment_Dhaka-IR2001.pdf)

The practice has been independently evaluated by UNDP; Schwab Foundation for Social Entrepreneurship Geneva, Switzerland; Water, Engineering and Development Centre, Loughborough University, United Kingdom; TECH MUSEUM of USA; SANDEC/EAWAG Duebendorf, Switzerland; and Ashoka Innovators for the Public, USA.

The practice has received following international awards:

- United Nations Poverty Eradication Award 2002, United Nations, New York USA
- Intel Environmental Award 2003, from TECH MUSEUM, San Jose, California, USA
- Elected as one of USA-based Fast Company magazine's First-ever Fast 50 champions of innovation for the year 2002. Fast Company, the magazine for management innovators, announced its first-ever "Fast 50 list", celebrating 50 “champions of innovation” whose achievements have led to significant change in their companies or society

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Ms. Shireen Kamal Sayeed, Assistant Resident Representative, UNDP

Ministry of Environment and Forest (MoEF)  
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Dr. Babar N.Kabir, Program Coordinator

### **III. Community Toilets in Indonesia**

#### **A. Introduction**

Community toilets were constructed in Tangerang, an industrial zone close to Jakarta (Indonesia) where migrant workers settled in areas with no water and sanitation facilities. The facilities were built with the help of foreign donors, but they are now sustained by user fees. They sell fresh water by the bucket and provide toilets and bathroom services. They are managed like private businesses by a family selected from each community.

The practice began in 1999 and by 2002, 29 Community Sanitation Centres had been built in Tangerang City (25 locations) and Surabaya City (4 locations). Just over 13,000 users use the sanitation centres each day, with each centre receiving between 300–500 users a day and generating an annual revenue of up to US\$ 2,400.

Active community participation in the project planning, construction, operation and maintenance helped to create a sense of community ownership over the practice and enhanced the willingness to use the service, ultimately contributing to its sustainability.

#### **B. Background**

Tangerang is a city adjacent to Jakarta, the capital of Indonesia. It serves as an industrial area and buffer zone for the rapidly growing capital. Economic and industrial growth in the 1980's and 1990's was followed by rapid urban growth, partly as a result of increased migration of workers to industrial areas. By 2002, the population of the city had reached 1.4 million, with a yearly growth rate of 4.29 per cent per cent, higher than the national average. The economic crisis in 1997 had a devastating impact on the Indonesian economy and in Tangerang City, including high unemployment, urban poverty, increased slum areas and an uncontrolled informal sector.

Most migrant workers in the city live in settlement without infrastructure and services such as water supply and solid waste management. According to recent data, only 22 per cent of the population has access to clean water provided by the Regional Water Supply Company. Another 55 per cent use ground water, while 20 per cent of the population, mostly the poor, is forced to consume unsafe drinking water. The limited network, coverage and production of the Regional Water Supply Company, which has been overwhelmed by the rapid growth of the urban population, is a serious problem for poorer and more remote, communities who do not have access to safe ground water.

Because most of the families living in the area are employed in manufacturing, average incomes are not very low. Nevertheless, access to basic environmental services is difficult. The community sanitation centres sought to address the need for sanitation services in many of these settlements. The sites chosen have problems with their local water supply and sanitation services, as well as other environmental issues. For example, settlements may be located near temporary waste disposal sites or in swampy areas that can carry water-borne disease.

#### **C. Initiating the practice**

The Institute for Integrated Social and Economic Development (BEST) is an independent, non-governmental organization, established in 1995, that focuses on urban poverty and community development issues. Mr. Hamzah Harun Al Rasyid, founder of

BEST and key person in this practice, is dedicated to facilitate community participation in all its activities.

Activities include the improvement of settlement infrastructure, the generation of community income, skills training, cooperative development, alternative energy provision, managerial assistance for small businesses, low-cost housing for migrant workers etc. Previous experiences with the Integrated Urban Community Development (IUCD) project based in the slum areas of North Jakarta motivated BEST's involvement in this practice.

To initiate the activities in Tangerang, BEST developed a list of settlements that experienced water and sanitation problems. The list was based on a field survey using criteria such as sites of migrant-workers settlements, lack of clean water and sanitation and low-income community. The field survey was conducted with the cooperation of the local government and village authorities.

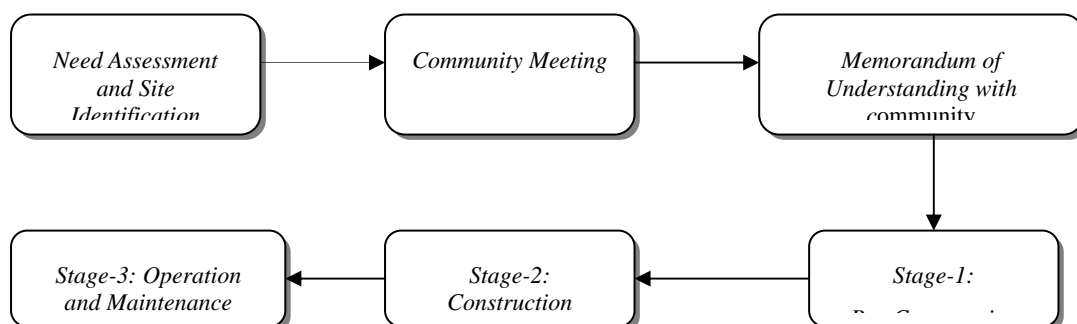
The next step was to select the sites through a consultative process with the target communities. Potential users of the service were invited to participate in community consultation meetings prior to the establishment of the facilities in their area. Their agreement to the construction of the facilities and support for them once they were established was critical to the success of the practice.

The community consultations involved the following activities:

- a. **Need Assessment and Site Identification:** This took place during the preliminary stage of the project. Its aim was to identify community aspirations and to disseminate the project proposal. This was done through site visits and interviews with target groups such as low-income communities, community leaders and the heads of neighbourhood committees.
- b. **Community Meetings.** Where local stakeholders showed an interest in the proposed project, the next step was to arrange a community meeting in order to discuss the project proposal further. This meeting was usually organized at the village level.
- c. **Development of a Memorandum of Understanding (MoU).** After a series of meeting, the final agreement was formulated into a MoU, which detailed community agreement to support project implementation and its willingness to pay for the facilities provided at an affordable price.

Once this had been done, BEST mobilized resources from partners to contribute to the practice. A joint cooperation agreement was prepared between BEST and the international donor agencies, local government and other partners.

**Figure 3.1 Stages of each centre**



## D. Partnership

This practice is a partnership between BEST, local communities, local government and international donor agencies. Through this partnership, BEST was able to draw on outside financial and technical resources as well as to ensure that the centres would meet the needs of the community.

BEST remains the main actor in this practice. It coordinates and manages the project resources at all stages of the project from the preparation to construction, operation and maintenance. Besides BEST, other partners involved are:

- a. **Donor agencies**, such as Bremen Overseas Research and Development Association (BORDA), the Mercy Corps, the Canada Fund, and the German Embassy in Indonesia. They provide the seed funding for the construction of the centre. A Joint Cooperation Agreement is signed between BEST and the international donor agencies for the construction of each centre.

After their initial investment BEST maintains its relationship with project donors through the provision of regular progress, and monitoring and evaluation reports. Its success in maintaining these relationships is demonstrated by the ongoing involvement of donors, all of who have made subsequent funds available for the construction of addition centres.

- b. The **local government** of Tangerang, provided funding for the construction of seven centres, and it facilitated the implementation of the practice. The municipality is aware of the practice and allows the construction and operations of the centres. However, BEST does not request construction permits for the centres from the local government, and in this sense, the centres remain “informal” constructions.
- c. **Communities** in 29 locations. Community cooperation is formalized through the signing of a MoU between the local communities and BEST. The MoU affirms the willingness of the community to pay for the facilities provided at affordable price.

Within the community, the key stakeholders are the potential users of the service. Other stakeholders include those owning or renting land near the centres and those employed by the practice either initially in its construction, or currently as maintenance and cleaning staff and small business owners who have shops and stalls near the centres

Local communities have changed from being the requesters of a service to being users. This change in status and relationship has been crucial as the practice would not be sustainable without community support. Therefore, BEST has provided regular reporting and undertaken consumer satisfaction surveys to ensure continued community participation and ownership of the practice.

- d. **Operators** of the centres. These are families chosen from the community who are paid a basic salary by BEST and take part of the profits. Most of them also provide other business on the side, like corner shop or café.

Each toilet maintenance operator signs an individual contract with BEST covering his or her conditions of employment, including monthly salary and rewards for achieving the target revenues.

## **E. Operations**

The practice started with just one centre in Tangerang in 1999; by 2002, 29 Community Sanitation Centres had been built – 25 in Tangerang City and 4 in Surabaya City (see table in Annex for a complete list of the centres). The expansion of the practice reflects the existing community needs for better sanitation services.

A typical community sanitation centre provides basic sanitation facilities such as bathrooms (six units), toilets (six units), a washing area, a community water point and a wastewater treatment plant (biogas digester). The treatment plant produces clean water and biogas. Each centre has about 350 – 500 users per day. Tariffs (that have remained at the same level since 1999) are: 200 rupiah for a 20 litre bucket of water, 200 rupiahs per use of the toilet, 300 rupiahs per use of the bathroom and 400 rupiahs per use of the bathroom and toilet (Average exchange rate in 2004 was \$1=Rs 8,940)

Each sanitation centre has one maintenance operator who oversees the day-to-day operations of the centre. Operators receive a basic salary per month. BEST estimates the expected income from each centre and collects only 90 per cent of that amount. All the extra revenue generated goes to the operator, who has an incentive for maintaining the centre in good condition and attracting customers. Furthermore, they can use the biogas generated and they often provide other services on the premises, such as café or corner shop.

A Management Team of BEST staff and toilet maintenance operators has been formed to deal with any complaints that may be made by users or local communities. Employees of BEST collect the revenue twice a week and monitor the toilet conditions, building and surrounding areas, water supply and other technical matters.

BEST prepares progress and financial reports detailing physical conditions, operational revenues and monthly expenditure in each centre. It also conducts a Consumer Satisfaction Survey to ascertain the opinions of consumers about the service provided. In the survey, consumers are asked to provide their own evaluation of the water quality and the services, as well as the benefits, the operator services, the tariffs, the impacts etc.

Another important role of BEST is to distribute the operational risks among the 29 centres, especially in connection with the technical failure of the water pump. A breakdown of the water pump would be a very expensive risk for an individual operator to bear at a given point.

From the point of view of the community, the central management of the centres by BEST ensures the continuity of the service. In case of a technical problem, the staff from BEST can be deployed fast and are available at any time.

## **F. Financial arrangements**

The construction of each community sanitation centre is fully subsidize by a grant from donors, while running costs are covered by fees. The initial financial outlay for the construction of one centre ranged from \$ 15,000 to \$ 18,000. The cost includes land acquisition, construction (including a wastewater treatment plant and bio-digester) and the purchase of a water-pump.

Once the centre is established, the operations and routine maintenance costs of the centre are financed through revenue generated from user fees. The average annual operational

costs are \$1,500, excluding periodic maintenance costs, while annual revenue ranges from \$1,800 to \$2,400.

It is a struggle to meet the periodic maintenance costs and show a return on investment. BEST estimates that not all its staff costs for servicing the centres are covered by revenues, so it has to rely on other sources of funding. An example of the costs and revenues of one project unit is presented in the following table:

**Table 3.1 Average Cost Components for a Community Sanitation Centre (CSC)**

<b>Component</b>	<b>Amount</b>	<b>Source of Fund</b>
Initial investment cost: Land acquisition (100 – 150 m2) Construction cost (6 bathroom and 6 toilets) Waste water treatment plant and biogas digester Water pump machine	US\$ 15,000 – 18,000	international donor agency
Average annual operation cost:	US\$ 1,560	BEST
Salary for toilet maintenance operator (@ US\$ 50 per month)	US\$ 600	
Electricity costs (@ US\$ 25 per month)	US\$ 300	
Cleaning Materials (@ US\$ 10 per month)	US\$ 120	
Social Contribution (@ US\$ 15 per month)	US\$ 180	
Overheads (@ US\$ 30 per month)	US\$ 360	
Average annual operation revenue	US\$ 1,800 – 2,400	Users
Average monthly user fees (@ CSC services 300 – 500 peoples/day, user fee: US\$ 0.03 – 0.05)	US\$ 150 – 200 per month	
Source: BEST		

## **G. Outcomes**

The main outcomes of the practice are the community toilet facilities and the provision of clean water and sanitation to poor communities in 29 settlements throughout Tangerang and Surabaya. The centres are used by more than 13,000 people each day. In addition, community awareness of the importance of sound sanitary practices has increased, and the cost of water has been lowered by 60 per cent compared to that of private water vendors.

As a result, community health has improved due to the reduction in wastewater accumulation, human excrement, etc. Further, the land values in areas surrounding the centres have increased and new sources of income have been created for small business operators, who opened small shops, selling consumer goods nearby.

The main achievement of the practice, however, has been in the change in attitudes and behaviour of communities. As a result of the establishment of the centres, communities

now not only practice more sanitary approaches to waste disposal, but have also felt encouraged to tackle other community problems such as improving drainage systems and local roads.

## **H. Addressing the needs of the poor**

People living in the areas selected by BEST are poor in terms of their limited access to clean water supplies and sanitation. Most are migrant workers employed in industrial areas and factories. They work an eight-hour day with an average minimum salary of about 700,000 to 800,000 rupiahs per months (US\$ 80 – 90). Although their income level is not extremely low, they live in accommodation without basic sanitation and had to buy clean water from vendors.

Overall, the centres improve the lives of the poor by providing easy access to water supply and sanitation facilities, reducing the cost of water supply, improving the environmental conditions and creating employment opportunities for local people working as toilet operators and construction workers.

Besides, many local communities were empowered by the signing of an MoU with BEST, which resulted not only in greater community participation in the practice, by also increased community participation in general, as demonstrated by community efforts to improve pathways and roads in their community following the building of the community toilets.

## **I. Sustainability**

This practice is financially sustainable only because the initial investment is financed by a grant. The customers therefore only have to support the running costs of the centres, which they can do. Given the relatively low income levels in the area, it would be very difficult to finance the initial investment through user fees as well.

Despite the uncertainty over its financial sustainability, the practice is socially and environmentally sustainable mainly because of the active community participation in the planning, construction, operation and maintenance of the practice and its success in responding to community needs and providing opportunities to local communities.

Not all centres are equally successful, though. The seven centres financed by the local government were established for political reasons in areas with few potential customers and they continuously struggle to generate enough income to cover the costs. BEST is actually subsidizing the operations of these centres with the revenue generated by the others.

## **J. Replication and up-scaling**

The practice is suitable for replication. Indeed, the 29 centres in existence now are direct replications (see Annex for a complete list of them), first in Tangerang City and then in Surabaya. The practice can be replicated in areas where there is no public water supply or sanitation and where there is a willingness of the users to support the service. It is uncertain that the practice is suitable for up-scaling though, as the service needs to be very close to the users' homes to be valued.

## **K. Conclusions**

The three key operational lessons that have been learnt from the practice are:

- a. Community participation is necessary in all development and implementation stages, because sustainability of the project depends on it. By increasing the involvement of the poor in service provision, it is more likely that the service provided is based on the needs of the community and its cost is based on what is affordable to the community.
- b. A subsidy to finance the initial investment is necessary, as the income generated by the facility will only cover the running costs.
- c. Community infrastructure and services can be provided by NGOs, if available resources are well managed and the private partner is motivated and dedicated to work together with the community.

The future challenge for the practice is to transform community usage of the public toilet facilities into better and healthier community sanitation practices which will in the long term contributed to an improvement in the health and environment of low-income communities. The practice also aims to extend the project's benefits to permanent housing areas, but its success will be strongly linked to the awareness of the community of the importance of healthy practices.

## **L. Documentation**

The information provided in this documentation is based on the available secondary sources of data and field visits to the sample practices. The practice was documented in the first months of 2004.

- Brochure on Community Sanitation Centres (CSC) printed by BEST
- VCD on Community Sanitation Centres prepared by BEST
- URDI documentation on Innovative Environmental Management
- Interview with Mr. Hamzah Harun Al-Rasyid (BEST Director)
- Field visits to 2 CSC locations in Alam Jaya Village, Tangerang
- Some relevant materials down loaded from the several web sites

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## **IV. Water for Poor Communities in the Philippines**

### **A. Introduction**

Tubig Para Sa Barangay (TPSB) or Water for Poor Communities is a programme that supplies water to the poor areas of Manila (Philippines).

The Manila Water Company, Inc. (MWCI), the private concessionaire that operates, manages and maintains the waterworks and sewerage facilities for the East area of Manila, launched the TPSB Programme in 1998. Since that date, 438 projects have been implemented, benefiting more than 700,000 urban poor residents. It is worth noting that of the total 218,000 households connected by MWCI within its service territory, from 1997 up to July of 2004, almost half fall under the TPSB programme. The TPBS has allowed MWCI to comply with its service obligations under the Concession Agreement, and gain the general public's support for its participation in the delivery of water services.

The TPSB programme has enabled poor households to easily connect to a piped-in water supply by easing land title requirements. It has relied on the strength and enthusiasm of community-based organizations and local government units to provide water services to depressed areas. The practice also introduced flexible financing schemes and water pricing (staggered payment of connection fees, cost sharing among residents, average water rates for bulk connections, etc.).

Another important aspect of the programme is the involvement of the poor themselves in service provision. Community members play crucial roles in the organization and management of the TPSB area, billing and collection of water charges from resident members and monitoring and maintenance of the facilities. The systematic installation of water meters in accessible and strategic locations (entrance of alleys, sidewalks, visible spots) is another key feature of the programme, which has resulted in more accurate and effective meter reading. As a consequence, fewer customers complain about the accuracy of their water bills. It has also minimized the cases of illegal tapping, which was rampant in the past.

### **B. Background**

In the mid-1990s, the urban population in the Philippines was growing by at least 1.5 to 2 million annually. While over 70 per cent of urban households had access to potable water in most large urban areas, water service was available only for few hours a day. Further, in many cities, contaminated water intruded into the piped water system when the pressure dropped, making the water unsafe for consumption.

Before the Metropolitan Water Works and Sewerage System (MWSS) was privatized, the water supply service in Metro Manila was inadequate. Water service coverage was reaching less than two-thirds of Metro Manila's population, while sewerage services were only available to eight per cent of the population. The average water pressure was insufficient at 3-5 pounds per square inch (psi); water availability averaged 17 hours per day, and water quality between 1994 and 1996 was below national standards with the residual chlorine close to the minimum level of 0.2 mg/l. The low quality of water supply services was the result of severe operational inefficiency and years of under-investment in network rehabilitation and development of new water supply sources.

Poverty also compounded the problem. Urban poor residents, the majority of which settle illegally on public and private lands, are often excluded from the formal provision of basic services, including water. Since the majority of poor urban households were not individually connected to MWSS they had to get their water from public faucets located far from their houses or buy it from vendors sourced legally or illegally from the MWSS mainlines or from private wells that are several times more expensive than piped water service. In some instances, poor families even resorted to water stealing (pilferage) by illegally tapping into the utility's mainlines. Due to these poor and unsafe connections, the residents tended to be vulnerable to water-borne diseases<sup>2</sup>.

The illegal connections also resulted in high levels of non-revenue water (ranging from 55 per cent to 61 per cent from 1992 to 1996). This lost revenue further aggravated MWSS's financial difficulties and its inability to improve and expand its operations.

The privatization of MWSS was the government's response to the water crisis. Manila Water Company, Inc (MWCI) took over the operations in the East Zone in 1997. A year later, the TPSB programme was launched as a strategy of MWCI to fulfill its service obligations under the 25-year Concession Agreement with MWSS. Consistent with MWCI's responsibility for the operation, maintenance, expansion and investments for water supply, sewerage and sanitation services for the East Zone service area, the TPSB was targeted to supply water to depressed urban poor and informal settler areas where the normal individual household connections are not feasible.

### **C. Initiating the practice**

#### **1. Privatization of MWSS**

The passage of the Water Crisis Act in 1995 established the government's commitment to the privatization of MWSS, which was believed to be the most viable approach in improving efficiency, raising financial resources for investments, and reducing the fiscal burden on the government. Since the aim was to resolve the water crisis in Metro Manila within a year, the legal foundations for private sector participation in MWSS were established through succeeding executive issuances. The International Finance Corporation (IFC) of the World Bank Group was commissioned to provide technical assistance during the privatization, including gathering relevant data and conducting analyses, designing the contractual arrangements and ensuring transparency under international competitive bidding procedures.

The MWSS privatization was undertaken through a 25-year concession agreement for two concessionaires for the East and West Zones of the MWSS service area respectively. The idea of dividing the MWSS service area into two and giving them to two separate private companies who gave the lowest tariff bids was to promote some competition, generate yardstick information and guard against monopoly profits. Bidding was conducted in February 1997. The consortium of Ayala/International Water, now called the Manila Water Company Inc. (MWCI) won the bid for the East Zone. The West Zone was awarded to Benpres/Lyonnaise de Eux (now Maynilad Water Services Inc.). Both companies commenced operations in August 1997.

The Concession Agreement specified, among others, the transitional arrangements, service, legal, financial and other obligations of MWCI, the obligations of MWSS

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<sup>2</sup>There were 107,273 diarrhea cases in 1997. Numerous cases of water-borne diseases were caused by unsafe and inadequate water connections.

including its residual and regulatory functions, provisions for water charges, rate adjustments, dispute resolution and other contract conditions.

In terms of service obligations, MWCI was required to expand coverage of water supply, sewerage and sanitation services, to ensure 24-hour water supply to the majority of the connections, to maintain water pressure at 16 psi by 2007 and to meet the national health and environmental standards on water and wastewater quality. MWCI was also obligated to cover households in depressed areas and informal settler communities who may not be able to afford individual connection fees by installing public faucets (1 per 475 people).

To fulfil its service obligations in the East Zone, MWCI embarked on a massive pipe replacement and network improvement programme. A comprehensive plan was developed to provide water services to areas previously not served by the MWSS. The company adopted a decentralization policy called the “Territory Management” approach to better identify efficient, responsive and area-specific solutions.

This approach, which strengthens the partnership between the company and the communities it serves, divides the concession area into seven manageable business areas namely: San Juan/Mandaluyong, Rizal/Taguig/Pateros, Marikina, Balara, Pasig, Makati and Cubao. Each business area is supervised by an Area Business Manager who is responsible for the entire operations of MWCI in the business area. The business areas are currently subdivided into 95 demand monitoring zones or territories and 263 district metering areas. Each territory has a dedicated specialist team, which is empowered to handle water supply and demand, non-revenue water monitoring and control and customer concerns in their respective territories and areas. The team is also responsible for the implementation of TPSB projects in its territory.

MWCI, in cooperation with other subsidiaries of its major shareholder, Ayala, is also engaged in other civic-oriented projects such as an integrated livelihood programme called “Kabuhayan Para sa Barangay” (KPSB), an initiative for the rehabilitation of around 237 public schools and various environmental projects such as tree-planting.

## 2. Development of TPSB

MWCI realized that a major portion of its market consist of urban poor residents, who buy water from informal vendors at a price more than ten times the cost of piped water. Tapping into this market and providing water at a more reasonable cost and with better service quality made good business sense.

MWCI initially adopted previous MWSS’s programmes to serve the urban poor. The company later decided to change the focus of the programmes to provide individual or communal water supply services to as many depressed communities as possible. A strategy that would facilitate this was designed in consultation with various stakeholders leading to the TPSB. Some requirements for connection applications were relaxed, such as waiving the certificate of land title or copy of lease contract. The TPSB Programme was launched a year after the concession commencement date.

The decision to pursue the implementation of the TPSB programme complemented the company’s corporate social responsibility goal of improving the quality of life of its urban poor customers. It was also consistent with the company’s “We Care” policy of customer service by addressing specific concerns and responding to the basic needs and difficulties of its existing and potential customers.

## **D. Partnership, roles and responsibilities**

To work effectively with the urban poor, a private company like MWCI needed the assistance and cooperation of local government units (LGUs) and community-based organizations (CBOs). Partnerships with the communities would enhance the community's sense of ownership and increase the willingness to pay, encourage residents to closely monitor and guard against pilferage, improve collection efficiency, increase transparency and expedite public consultations, all of which make the TPSB programme manageable, financially viable and sustainable. LGUs have, in one way or another, provided subsidies or financial contributions to TPSB projects that have reduced the installation costs and made connection charges more affordable to poor households.

A typical arrangement under the TPSB programme is a Memorandum of Agreement (MoA) between MWCI and the other party (LGU, CBO or NGO). Sometimes the partnership can be a tripartite agreement among MWCI, CBO and the city government. The cost sharing for the project and the rights and obligations of each party are clearly stipulated in the MoA.

### **Manila Water Company Inc.**

Under a typical MoA, the MWCI is responsible for the supervision of the construction and laying of new pipelines to connect the area to the existing utility line and the installation of the mother/bulk meter, and group taps/submeters or individual meters. It should be noted that actual installation is subcontracted to an accredited MWCI private contractor (through a separate Contract of Accreditation between MWCI and a private contractor). This outsourcing by MWCI does not, however, limit the company's role of administering and managing the construction activities. Upon project completion, MWCI holds ownership of the project and it may accept and install at the expense of the applicants new water service connections to be tapped to the new pipes installed under the project. On top of all its rights and obligations under the MoA, MWCI must also ensure that good quality water is delivered daily during actual TPSB operations.

Apart from those already mentioned above, MWCI is also bound by its duties and obligations under the mother Concession Agreement with the MWSS that regulates all its activities, including the TPSB.

### **Local Government Units, Community-Based Organizations or Associations, Non-Governmental Organizations**

Community representatives (barangay, association, city or municipality officials) are responsible for coordinating the implementation of the TPSB programme with MWCI. Their roles include mobilizing and organizing the community, giving endorsements for the issuance of an environmental certificate of conveyance by the Department of Environment and Natural Resources, and approving permits for excavation. The barangay, city or municipality sometimes provides financial support for construction materials and labour during pipe installations. The role of NGO's is mostly to arrange information, education and communication campaigns and community mobilization.

For community-managed water systems, the community representatives, leaders, barangay or association officials are also responsible for the day-to-day management and operation of the TPSB facilities, including the repair and maintenance of pipes and other facilities located after the MWCI bulk or group meter. They are also responsible for the monthly billing and collection of water payments from the residents and for remitting the aggregate amount to the MWCI.

## **Metropolitan Waterworks and Sewerage System, Regulatory Office**

A Regulatory Office (MWSS-RO) was established in August 1997 by virtue of the Concession Agreement. The Regulatory Office functions as a collegial body and requires a majority vote of three head-regulators to pass any action or decision on substantive matters affecting the Concession Agreement.

The Regulatory Office regulates and monitors the programme ensuring that MWCI complies with its contractual obligations under the Concession Agreement and applies the approved water rates. It also responds to customer complaints against MWCI including those received from the customers of the TPSB.

The MWSS-RO is also involved in the monitoring and implementation of the TPBS programme. It reviews the various agreements between MWCI and LGUs and CBOs for the TPSB schemes and coordinates elements of the programme, including the maximum number of households to be connected to a bulk meter. The MWSS-RO has limited the number of connections for a bulk meter to around 30 to 40 households only and approves the quality of pipes and water meters used in TPSB projects. The MWSS-RO regulates the water rates being charged by MWCI only for bulk or mother meters in a specific TPSB area.

### **E. Operations**

The TPSB programme is being implemented in urban poor areas and settlements of Quezon City, Marikina, Mandaluyong, San Juan, Pasig, Makati, Taguig, Pateros, San Andres and Sta. Ana within Metro Manila and the adjacent Municipalities of Cainta and Taytay in Rizal Province. These areas comprise the East Zone of the Metropolitan Waterworks and Sewerage System (MWSS) service area.

The process starts with the identification and assessment of potential areas for TPSB implementation by MWCI, in collaboration with LGUs, CBOs or neighbourhood associations. Areas where there are large clusters of low-income families, a strong community organization exists, illegal piping is rampant, water quality is poor and roads are wide enough to lay tertiary mainlines are suitable and viable areas for TPSB.

Once the area is identified and positively assessed, the MWCI agent and the community representative jointly organize the recipient neighbourhood to accept the new water service connection. If the community is not yet organized, MWCI assists and facilitates in community mobilizing and organization. Community meetings are held to explain the benefits of phasing out all illegal connections and to assist residents to decide on the form of service that is appropriate to their community, including the collection arrangements.

After the implementation arrangement has been chosen and the MoA and other pertinent contracts have been signed, MWCI, through its accredited contractor, commences construction of tertiary mainlines, waterlines extension and meter installations. A key element during meter installation is the bank-arrangement (side-by-side installation) of water meters in accessible locations (entrance of alleys, sidewalks, along the street, etc.) which results in more efficient, accurate and easier meter reading and less illegal tapping, a common problem encountered in the previous practice of door-to-door meter installation. Thereafter, the TPSB facilities will be tested and immediately commence service operations.

Relationships between the parties can range from formal (forged through mini water distribution system or community-managed water connection contracts) to less formal (individual connections or group tap systems).

Implementation and operational risks are shared between MWCI and the participating LGU, barangay or community organization. For the construction of the infrastructure and its operations, MWCI bears all risks that relate to the tertiary mainlines, bulk meters and group taps, while the communities bear the risks that relate to the extensions, individual meters and other facilities located after the MWCI meter. Similarly, MWCI bears the risk for collection of fees to its direct customers (individuals, groups or communities), while the communities (through their leaders or representatives) have the responsibility to collect the fees from the individual households.

Mitigating measures for risks on collection of fees include service disconnection and penalty charges. To cover repair and maintenance risks, the community representatives usually require additional charges in their monthly collections from the residents.

Under the Concession Agreement, MWCI is required to regularly report to the MWSS-RO regarding its activities for the delivery of water and sanitation services in its service area, including the TPSB programme. Annual reports are prepared to monitor outcomes and progress of the MWCI. Last year, the Key Performance Indicators/Business Efficiency Measures monitoring system was adopted. The system is a performance-based monitoring system, made up of a number of indicators developed by MWSS and its consultants, to keep track of MWCI's performance. The indicators focus on service delivery, collection efficiency, non-revenue water and cost effectiveness.

MWCI ensures that the other party (LGU and/or CBO) complies with the TPSB agreement by monitoring TPSB operations in their respective territories. Although no formal regulatory arrangement between MWCI and the participating communities has been established, MWCI is now considering the possibility of reviewing and monitoring water rates being charged by community representatives to protect poor households against overcharging.

Many TPSB projects faced resistance from some parties who were previously operating the public faucets, running the illegal water distribution or selling unreasonably expensive private water in the depressed areas before the TPSB. In these instances, the presence of a strong community organization, cooperation and support from the barangay and association officials and leaders, unity of the community residents and assistance from the local police/government were all instrumental in the successful implementation of the programme.

Though MWCI has little trouble in collecting monthly payments from its customers, some problems with the collection of payments from the individual households were encountered by the community leaders. Since collection agents are expected to remit the water payments to the MWCI on a monthly basis, community leaders usually enforce strict payment rules on their members, disconnecting the service to those who cannot pay on time or charging penalties to non-complying residents. On the other hand, there have also been complains of overcharging of households by community leaders. The MWCI is now exploring alternative ways to regulate and monitor water pricing to prevent manipulation and exploitation by the community leaders.

Another challenge is the increasing block tariff policy being implemented in Metro Manila. Under this tariff structure, water rates are differentiated per consumption range or blocks, i.e. first 10 m<sup>3</sup>, 11-20 m<sup>3</sup>, 21-40 m<sup>3</sup>, etc. with excess consumption beyond 10 m<sup>3</sup>

charged higher rates. Since the MWCI supplies water in bulk in some TPSB areas, technically water rates in these areas should be classified under the “higher-rate” block. However, MWCI introduced social rates to counterbalance the regressive effects of the increasing block tariff structure by dividing the total community consumption by the total number of households to get an average consumption, corresponding to a water rate which would be much lower than rates for bulk water.

## **F. Financial arrangements**

The MWCI prepares a Business Case before the implementation of a TPSB project in a certain area. The Business Case indicates the proposed project cash outlay including cost of materials and civil works, total project cost, connection fees, meter deposits and pay back period. The cost of civil works and materials are then reflected in the Job Order to be prepared by MWCI for the accredited contractor that is awarded the particular TPSB project.

The cost sharing arrangement for a TPSB project is specified in the MoA. For example, the TPSB Project located at Barangay Quirino 2-C in Quezon City has a total project cost of P1.3 million (\$25,000). The City, Barangay and MWCI share the cost of the project as follows:

- MWCI P600,000 (46.2 %)
- Quezon City Government P500,000 (38.4 %)
- Barangay P200,000 (15.4 %)

The share of the third party (LGU or CBO), as in the above-illustrated project, is usually remitted to the MWCI only after project completion. In view of this, the MWCI provides the initial capital investments for the project. These capital funds are either sourced from the company’s existing assets, revenues from other operations or from its lenders.

The company has earmarked about P19 billion (\$ 351.85 million) for capital investments for the next five years. IFC has also recently approved a \$ 30 million loan to the company.

The funds advanced by the MWCI are used as payments for the installation of the tertiary mainlines, bulk or group meters and other water connection facilities. However, connection and metering charges are borne by the community residents. Further, all costs relative to installations outside the MWCI meter are shouldered by the households. Nonetheless, flexible financing schemes (three months to six months installments for a connection fee) and cost-sharing arrangements among community members are available to ease payment requirements.

Financial arrangements within the community are decided and approved by all households before implementation.

In some cases, the city, municipality or association offers a financial contribution and support to TPSB projects. They sometimes waive excavation or digging fees while the barangay may also forego the permit fees. Most of the time, the project cost is shared between the LGU and the community, but there are also instances when the whole cost is shouldered by the LGU. All these measures reduce the cost of installation accordingly and result in decreased connection charges for TPSB customers.

During the operational stage, revenues from the programme are used by MWCI for its operating expenses while maintenance, administrative and operating requirements of the community leaders are sourced from the proceeds of their monthly collections.

## **G. Outcomes**

From interviews with households and public consultations and discussions, it is clear that the households serviced by the TPSB programme have benefited in terms of access to safe water at a lower cost. Equally important, time that used to be spent queuing for public faucets, is now used for income-earning, study or leisure. As a result, increased per capita consumption is now higher than the average 30-70 litres per capita per day for households buying from vendors.

To date, the TPSB programme has successfully brought potable water supply to more than 700,000 people living in the depressed communities all over the East Zone. Supply is now available for 20 to 24 hours a day, many leaks have been repaired, cases of illegal connections have diminished and water quality has dramatically improved. As a result of the enhancement of the water supply, public health has also improved. The programme significantly helped in the reduction of diarrhea cases in Metro Manila.

For the MWCI, the programme brought a reduction in non-revenue water or unbilled water (water from which no revenue can be derived by the company either because it is lost through leakage or pilferage), an increase in the billed volume (water consumption increased from 44,000 cubic meters in 1998 to 2,532,000 cubic meters in 2003), improved collection efficiency of 90 to 95 per cent and a positive profit margin.

The following are some figures showing key results of MWCI's performance since the start of the concession period. Directly and indirectly, the TPSB programme has been instrumental in achieving these outcomes.

- Non-revenue water level decreased from 63 per cent in 1997 to 47 per cent at present (roughly 150 million liters per day of water saved since 1997)
- 24-hour water service coverage increased from 27 per cent of the East Zone population in 1997 to 84 per cent at present
- Additional 215,000 new household connections have been installed, more than half of which are TPSB connections
- There is 100 per cent compliance with water quality standards, from only 91 per cent in 1997. MWCI water continually surpassed the 95 per cent limit set by the Department of Health for drinking water and test results show that 7,128 out of 7,138 samples taken between January and December 2003 comply with the bacteriological standards set by the Philippine National Standards for Drinking Water.
- Billed volume increased by 83 per cent, from roughly 440 MLD in 1997 to 800 MLD at present
- Some 3,320 leaks in main pipelines and 202,979 leaks in service pipe connections were fixed since 1997

A key ingredient in the success of the TPSB is its aggressive rollout. By mid 2003 alone, the MWCI had already surpassed its year-end TPSB target of 100,000 households after 110,000 households were connected to the central supply system.

An unexpected outcome were the cases where community representatives overcharged the customers, abusing their power to bill and collect water charges in their areas. Although the MWCI agrees that the community representatives can incorporate

additional charges to cover for administrative and maintenance expenses, the water rates to be applied to the individual households should still be within the reasonable level and necessary steps are being taken now to address this problem.

## **H. Addressing the needs of the poor**

The TPSB programme was conceptualized and developed with the goal of providing essential water services to poor communities. The poor residents are involved at all phases of the practice. They are decision-makers in the process since they will choose what appropriate TPSB connection scheme will be applied to their community. They actively participate in organizing and mobilizing the community and in structuring the collection arrangement for the area. They also assign or elect representatives or officials who are responsible for the supervision of the communal water system.

During operation (in the case of community or bulk meter connections), the community representatives, who are also, in most cases, from poor families, are involved in the management, maintenance and administration of the project. They also act as collection agents for the MWCI, thereby giving them some employment opportunities.

To address the needs of the poor, certain policy changes were adopted by the MWCI in implementing the TPSB programme. The connection application requirements (land title requirements) were waived since most of the poor come from informal settler communities and as a result, they lack ownership title to the land or permission from public and private owners of the land.

Also, connection fees were allowed to be paid in installments, enabling poor customers to easily connect to the piped water service. Sometimes, the local government provides subsidies, such as the cost of installation and connection, or financial support in the form of material and labour contributions during project construction. These subsidies result in reduced installation and connection costs to poor households. Moreover, poor communities were given income-earning opportunities during project operation through billing and collection activities.

The MWCI also helped poor families by setting up a micro-finance facility for small- to medium-scale livelihood projects referred to as the “Kabuhayan Para sa Barangay” (Livelihood for the Barangay) Programme in some TPSB areas.

With regard to social inclusion, the residents in the poor communities that now have piped water connections feel that they have become a legitimate part of society, receiving the same services that the rest has been enjoying. The programme has given the residents a sense of self-esteem and encouraged them to pursue further improvements in their standard of living.

Lastly, owing to the successful implementation of the TPSB, the MWCI is now considering the possibility of putting up a low-cost sewerage and sanitation programme for poor communities to address their environmental and health needs. Lessons learned and opportunities identified in the TPSB programme may be useful in designing this programme and, once implemented, the project will provide a more holistic approach to addressing the plight of urban poor communities in the company’s areas of responsibilities.

## **I. Sustainability**

Economic sustainability is guaranteed by the high willingness-to-pay of low-income households plus the financial backing and support given by some local government units and community-based organizations. The MWCI is also preparing to strengthen the programme with other projects related to sanitation (sewerage services) and income generation to maintain the programme's environmental and social sustainability.

To ensure that the benefits gained from the practice and the partnership are sustained and improved, however, some changes and areas for improvement must be considered.

There is a clear need to adequately empower the community water association while providing it with appropriate incentives to make arrangements more equitable and sustainable. For example, discounts may be granted taking into account the reduction in non-revenue water plus the savings in the billing and collection costs on the part of the MWCI as a result of the community's favorable participation in the programme.

The MWSS-RO should also find a way to monitor and regulate the water rates being charged by the community representatives and officials so that customers, especially the poor, are adequately protected from monopolistic and unreasonably high prices.

Lastly, sustainability of the practice may be affected by MWCI's 25-year concession period. Measures such as extension of the concession period or take-over of operations by another party must be considered to ensure continued implementation of the programme.

## **J. Replication and up-scaling**

The TPSB programme is actually a replication of a model in 438 locations within the area assigned to the MWCI. As long as the communities are well-organized, financial and physical resources are available (capital investments for construction works, water supply availability, etc.), there is an evident market demand and the areas will allow installation of water mainlines, a TPSB project can be easily implemented.

So far, the P 120-million Manggahan Floodway Water Supply Project remains the biggest TPSB project, supplying over 15 million litres of water per day to more than 200,000 urban poor residents living along the man-made canal. However, the MWSS-RO has expressed its concern that the number of households connected to bulk or communal meters be limited to 30 to 40 households for technical reasons and easier management and maintenance. Still, up-scaling can be possible through other schemes such as group taps and individual connections.

Expansion can be limited by the capability of community-based organizations and local governments to supervise manage and control areas with large number of residents in terms of collection, operation and maintenance.

## **K. Conclusions**

The TPSB practice has shown that active involvement and cooperation of community-based organizations and local government units can bring basic services to the consumers, particularly the poor people. The programme has also illustrated that there is no single model that will be effective in all settings. Flexibility and innovation are thus important factors to consider. Moreover, the programme has demonstrated that better access to potable water services results in increased water consumption, translating not only in better return for the concessionaire but also in improved public sanitation and

hygiene. It has also proven that the willingness-to-pay of low-income households for essential public services is high and that flexible financing schemes will encourage access to piped water supply. Through the TPSB, it was also realized that for-profit companies could derive financial benefits from socially oriented endeavors. While direct revenues may not necessarily be substantial, savings in terms of improvement in non-revenue water levels may be significant.

One problem encountered in its implementation, however, is the tendency of community leaders or representatives to overcharge residents in collecting individual water payments. The MWCI is now exploring the possibility of recommending a cap on water rates chargeable to TPSB consumers, taking into consideration their actual water consumption.

Relaxing technical and institutional requirements such as the waiving of land title requirements and allowing installments in connection fee payments has been very helpful to reduce connection costs and pave the way for regularizing illegal connections, particularly in informal settler communities which, in turn, resulted in reduced non-revenue water.

Certain reforms in the water pricing policy may also be desired. Although the rising block tariff structure usually employed in Metro Manila for water services has been partially modified for the TPSB to come up with average water rates for communal or bulk connections, measures must still be taken to make the fees comparable to individual connection charges. The socialized pricing scheme of the MWCI may somewhat reduce the costs to poor customers, but it can still be enhanced to maximize the benefits of the pro-poor programme. Thus, careful evaluation and possible improvement of the pricing policy must be made.

The regulatory framework must also be revisited to expand the coverage of the monitoring and regulatory functions of the MWSS to cover private-community partnerships such as partnerships forged through the TPSB practice. Regulation will be important in the pricing of water rates by community representatives in order to protect consumers from abuse and manipulation.

## **L. Documentation**

This documentation was prepared from 10 August 2004 to 8 September 2004 from various materials, reports, papers, news articles and other relevant documents about the practice as well as through consultations with key stakeholders of the programme. Interviews and consultations with MWCI Sustainable Development Programme Manager, Mr. Jeric Sevilla, and MWCI TPSB Product Manager, Ms. Prevelyn Gazmen, together with some territorial business managers were made to properly document the programme. Verification was also made through coordination and consultation with the MWSS-RO Chief Regulator Eduardo Santos.

Site visits were made to a number of TPSB areas in Barangay Makaturing and Barangay Ibaba Block 37 and Block 38 in the City of Mandaluyong, Metro Manila to better assess the programme as well as validate the author's documentation. Interviews with the community and association leaders in these areas were conducted and some poor beneficiaries were asked about the positive outcomes, problems encountered and overall impact of the practice.

Based on the consultations with the MWCI, numerous agencies, researchers, students and institutions have done research and evaluation on the TPSB Programme. Some of the

agencies that conducted a study and prepared papers/reports on the programme include the Asian Development Bank and the Philippine Institute for Development Studies.

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## 2. Details of practice partners

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### **Metropolitan Waterworks and Sewerage System (MWSS) – Regulatory Office**

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For participating Local Government Units (LGUs) and Community-Based Organizations (CBOs) names and contact details may be requested from MWCI.

## **V. Water Distribution in Colombo**

### **A. Introduction**

This practice provides a permanent water supply to the squatter community of Halgahakumbura in Colombo, Sri Lanka. At the start of the practice, only 48 out of 556 households had a water connection. With UNESCAP's assistance, the National Water Supply and Drainage Board, in partnership with a private company, extended its network of water pipes to the community, and gave all households the opportunity to connect to the water supply for a monthly fee. This is the first public-private partnership in the water sector in Sri Lanka.

The project started in January 2003 and by the middle of 2005, the entire community was connected. As the water supply network extended, a grid of main drains covering the entire settlement was constructed.

The experience in Halgahakumbura has shown that people on low incomes are able and willing to pay for better services. Furthermore, the partnership with a small private company lowered the costs of extending the network of pipes inside the community and managing the system. The National Water Supply and Drainage Board is now considering to extend this practice to other areas in Colombo.

### **B. Background**

#### **1. Community needs**

Halgahakumbura, better known as Dumpwatte, "the Settlement on the Dump", was formed by illegal occupation of an area formerly used as a dumpsite, next to a canal. It has a total population of 2,742 people — 623 families living in 556 households. Only 79 of the dwellings can be considered permanent housing units. The settlement does not have common facilities like a community centre or a common play area. The main income sources of the people are unskilled labour and informal business activities. The average monthly income per family is estimated at Rs. 4,000.

A Community Action Planning exercise (carried out under this practice) identified the major problems in the community. Among them, the lack of individual water connections, of a drainage and solid waste disposal system, the illegal occupation of the land, poor access roads and no financial support for housing improvement were singled out. Also mentioned was the lack of unity in the community, particularly when it came to controlling unauthorized constructions.

Only 48 households in the community had individual water connections: the other 508 households were sharing 8 stand posts to collect their water. Furthermore, only 162 houses had individual toilets and there was no proper drainage system, which increased the risk of flooding. This situation was not unique to Halgahakumbura. A survey carried out in 2001/2002 found that only 44 per cent of people in Colombo have individual house connections and that 33 per cent of the people have difficulty accessing drinking water.

This lack of individual water connections forces people (especially women and girls) to spend long time queuing for water and carrying it home from the stand posts, foregoing income generation, study or leisure. Furthermore, sharing eight stand posts among 508 households inevitably resulted in discord and disagreement among neighbours.

According to an assessment by Sevanatha, residents of Halgahakumbura were willing to pay the normal connection fee and water charges if individual connections were installed.

## 2. Institutional framework

The National Water Supply and Drainage Board (NSWDB), under the Ministry of Urban Development and Water Supply, has a national monopoly for water supply in Sri Lanka.

The NSWDB's National Policy on Water Supply and Sanitation of August 2002 acknowledges that: "While coverage levels and service quality have improved markedly over the past decade, the need for water services has outstripped the government's ability to provide sufficient water and sanitation (including pipe-borne sewerage infrastructure) and ensure equitable access to the citizens throughout the country." The policy then sets out a clear sector objective: "Reform the structure for service provision to provide incentives for efficiency, attract private-sector participation, improve accountability, and support community involvement while ensuring adequate provision for low-income urban and rural consumers."

Among the strategies to achieve this objective is the involvement of the private sector in water supply and sewerage services to improve the efficiency and autonomy of service providers. Where the private sector is involved in providing water services, the Government, NWSDB, Municipal Councils, Urban Councils, and Pradeshiya Sabhas shall retain ownership of water supply and sewerage assets, unless they are privately financed and developed.

The same document advocates for separating the planning functions of NWSDB from the operational functions and establishing separate regional cost centres within NWSDB to promote accountability and provide incentives for increased operational efficiency. The NWSDB would assist in the provision of management and technical support for the development and operations of small non-integrated water supply schemes on a cost recovery basis. Local authorities, CBOs and community groups, and small entrepreneurs would be encouraged to take over the management of rural water schemes. Despite the adoption of this policy, the attitude of the Sri Lankan government towards water privatization has been cautious.

Besides the limited coverage of low-income groups, a major point of concern for the NWSDB was also the substantial proportion of Non-Revenue Water (i.e. the amount of water supplied that does not generate any income for the supplier) in the Greater Colombo area. . The Greater Colombo Water Supply System receives an average of 132 million gallons (600,000 cubic metres) of water a day, while the average billed amount of water is about 82 million gallons (372,000 cubic metres). This means that the Greater Colombo system has an average NRW of 38 per cent. The figure for Colombo City is even worse (52 per cent) and there had been no improvement in 2004. The NWSDB aims at reducing these rates to 20 per cent and 30 per cent respectively by 2006.

The NWSDB attributes NRW to leaks in main pipeline systems, consumption through stand posts and common bath and toilet taps in low-income settlements, illegal water connections and billing errors due to faulty meters.

In the past several years, NWSDB has taken steps to reduce the number of public water outlets. The pilot project in Halgahakumbura had the capacity to reduce NRW in Halgahakumbura by connecting houses individually and closing the stand posts. Furthermore, if successful, the experience could be replicated in other communities in Colombo, further contributing to that goal.

### **C. Initiating the practice**

This innovative water distribution system originated as a demonstration project under a regional UNESCAP's project on Pro-Poor Public Private Partnerships (5P), a follow-up to the World Summit on Sustainable Development held in Johannesburg in September 2002.

As a strategic option, UNESCAP focused on the role of the private sector in public services provision and the need to identify strategies through which public-private partnerships can work for the poor. Sri Lanka was chosen as the site for a demonstration project on water supply to the poor through a public-private partnership that had the capacity to be replicated in other locations across Asia.

The National Water Supply and Drainage Board (NWSDB) was chosen by the Government of Sri Lanka as the natural public counterpart of the project. The Water Board was motivated by the capacity of this practice to extend individual water connections and reduce non-revenue water in the community of Halgahakumbura, without the need to fund the investment. If the model proved successful, it could consider replicating it in other communities in Colombo.

The project began with a series of meetings held to create awareness on conceptual and practical aspects of the proposed practice among all stakeholders including the Colombo Municipal Council (the local authority), local politicians, community members, civil society and NGOs. A National Steering Committee and a Coordinating Committee were formed.

During the initial consultation between UNESCAP and NWSDB, it was suggested to use a NGO to assist with the community mobilization, and Sevanatha was chosen based on its long-standing reputation of working in partnership with government and with low-income communities. The practice fell well within the interests of the NGO, as it aimed at improving the well being of the urban poor through community mobilization and looked for fresh approaches to the provision of utility services for the urban poor.

To select a site for the project, Sevanatha developed a list of potential communities in Colombo, based on its experience in working in low-income settlements. In addition, NWSDB provided a list of settlements that did not generate income (i.e. consumed non-revenue water). Sevanatha held various discussions with these communities and pre-selected three sites. Community dialogues and surveys were conducted with the three settlements to assess their needs and their willingness to participate in the scheme. Based on these, the National Steering Committee selected Halgahakumbura as the project site, in February 2004. The community had made several attempts in the past to obtain individual water connections, but all of them had failed. It soon realized that this project was a unique opportunity to reach that goal.

The selection was followed by a survey to look more closely at the socio-economic situation of the community. Sevanatha took steps to strengthen the community organization and activate the Community Development Council. A Community Action Planning workshop was held to identify community concerns and priorities. Community members identified issues, prioritized needs, proposed possible solutions and developed strategies. Individual water supply connections and drainage were recognized among the top priorities. A sample survey of the consumption of water in Halgahakumbura was carried out, followed by further discussions with the community to create awareness on the need for partnership to bring water supply to the settlement.

Selecting a private partner for the practice was the next step. Sevanatha looked for possible candidates, using the following criteria: knowledge and experience, technical competence, financial strength and willingness to provide public utilities on a commercial basis. With the help of the CBO, NWSDB and public organizations in and around the settlement, it identified 22 small private companies. Of these, ten were short-listed and invited to tender for the partnership. These companies were introduced to the principles of the project through discussions with the NWSDB, Sevanatha and through field visits. Based on this information, the companies produced feasibility studies that examined the technical and financial aspects of the project. By the end of March 2004, five companies were invited to bid for the project, but only one (Petra Engineering) did so within the deadline.

Petra Engineering was initially attracted by the substantial grant of Rs. 500,000 from the UNESCAP project to the private-sector partner, as it helped to mitigate the risk of participating in an innovative and unusual business. The Managing Director of Petra Engineering recognized that “the revenues expected from water distribution in this community would be just enough to cover the costs. However, I expect that the experience here will allow us to expand this model and increase our profits”. However, the company was also motivated by the ultimate goal of the project, to bring water to slum dwellers.

Once Petra Engineering was selected, Sevanatha facilitated several meetings between the private company and the community, while a sales agreement was signed between Petra and NWSDB. The NWSDB obtained the approval of the municipality and that of the Minister of Urban Development and Water Supply. The NWSDB also extended its water supply network to reach the entrance of the community and established a meter to measure the water that Petra would receive from the NWSDB.

At this stage, work could begin in laying the pipes inside the community. The project sponsored by ESCAP concluded in December 2004, when Petra Engineering started to provide water to the community.

#### **D. Partnership**

This practice is the first public-private partnership in the water sector in Sri Lanka. In this partnership, the NWSDB granted a concession to Petra Engineering for 5 years, authorizing Petra to sell water to individual households in Halgahakumbura during that period. The community of Halgahakumbura is an important partner in the practice.

### Box 5.1. Partners

1) **The National Water Supply and Drainage Board (NWSDB)** is the national monopoly for delivering water in bulk. It is presently under the Ministry of Urban Development and Water Supply. It acts as a regulatory authority and is responsible for setting national water tariff rates.

2) **Petra Engineering Services** is a private-sector company undertaking civil construction and steel fabrication work. The company's main line of business is to construct towers for telecommunications companies. In the past, it used to work mainly as a contractor for the public sector.

3) **The Halgahakumbura Community Development Council (CDC)** is a community-based organization registered with the Colombo Municipality. It has an elected president and all residents pay a small monthly fee (Rs. 10) to cover expenses.

4) **Sevanatha Urban Resource Centre** is a local NGO specialized in human settlements development in low-income areas. Sevanatha has been working closely with the Colombo Municipal Council (CMC) for over 15 years in supporting Community Development Councils.

#### 1. Roles and responsibilities of each partner

The NWSDB provides water from its network that extends to the entrance to the community, where it sells the water to Petra. It also provides technical assistance to Petra and is responsible for quality control.

Petra Engineering conducted the feasibility study, laid the pipes inside the community and established the individual connections with meters. It operates and maintains the system, by buying water from the NWSDB and selling it to the households. It is also responsible for billing and collection of payments.

The CDC is the main link between the households and the private sector, and it speaks for the community in any discussion with other stakeholders. It encourages the timely and regular payment of bills and monitors the maintenance of the infrastructure.

The individual households are responsible for the maintenance of the household water supply system (including the water meter) and the timely payment of water bills.

Sevanatha identified the community, conducted socio-economic and customer satisfaction surveys, mobilized the community, facilitated the development of action plans, identified the private company, assisted the NWSDB and the private company in the development of the model and linked the community with the private company and the NWSDB. Its involvement was phasing-out during the first half of 2005.

UNESCAP provided technical assistance and funding for pilot project implementation.

#### 2. Legal arrangements

Contractual agreements were signed between UNESCAP and the Sevanatha Urban Resource Centre, between NWSDB and Petra, and between Petra and individual households with new direct water connections.

The main legal documents of the practice are the tender document and the contract between NWSDB and Petra, valid for a period of five years. Petra also engages in individual contracts with each of the households connected to its network. The tariffs are those set by NWSDB at the national level.

A committee of five persons was formed within the Halgahakumbura Community Development Council (CDC) to coordinate and monitor the water distribution. The team is the main interface between the community and the other project partners, and it represent the community at regular project progress meetings held at the NWSDB. It also acts as a guide for people who want to learn more about the project.

In the event of non-payment of bills by the households, the NWSDB issues a letter of authority to Petra to act in terms of the law to collect the bill and to take all necessary action — including disconnection of the supply, — to do so. However, negotiations with the concerned household and the intermediary support of the CDCare considered the first option.

In the event of a disagreement between Petra and the Water Board, it is the decision of the General Manager of the NWSDB that is final and binding. If Petra fails to repay the loan as stipulated, the NWSDB can adjust the tariff that it charges Petra for the water to recover the loan. Besides, Petra had to place Rs. 350,000 with the Water Board as a guarantee bond, to respond for any break in the contract. In this regard, Petra's management expressed some concern about the unequal power relationship between the two partners.

### 3. Risks sharing and management

NWSDB bears a limited risk from this initiative, considering that it was receiving any revenue from this community before the start of the project. Petra may default in its obligations, but in that case, the infrastructure will return to NWSDB and it should be easy to find another company willing to run the service.

Petra bears the risk of losing its investment, if the scheme does not work, although the grant given by UNESCAP mitigated that risk to a great extent. The main reason for failure would be the non-payment by households. In February 2005, there had already been some problems with fee collection.

The project has improved the living conditions of the households, although they risk being disconnected of the water service, if they do not pay, a possibility that is not so remote given the low income of most households. In that event, they would be worse off than before the practice, as the stand posts in the community have been closed and they would have to go even further than before to fetch the water.

The contractual agreement between Petra and the individual households clearly states that Petra has the authority to disconnect the water supply connection, if the consumer does not pay the rates for the supply of water. The households also agreed to pay Petra for any damage caused to the water meters.

## **E. Operations**

The main element of this practice is a concession granted by NWSDB to Petra Engineering to extend the network of pipes and establish individual connections inside the community and distribute water to the 556 households for a period of 5 years. The NWSDB is still responsible for delivering water up to the entrance of the community, where the water is metered and sold to Petra for Rs 2 per cubic meter.

Once Petra Engineering was selected for the concession, the process of signing the agreement with the households started. Sevanantha and Petra started to collect the applications in August 2004, indicating the commitment of the community to pay for the water services provided by the company. Most households in the community had paid the initial installment of Rs. 500 by the end of August. Each household signed an agreement that served as the contract.

In September 2004, the company started the work of laying the pipes inside the community. Designing the system needed the technical expertise of NWSDB, but the actual construction would have been feasible to any company with construction

experience. “Not more than a plumber” is required for this work, according to Petra’s director. Individual connections with meters were installed by the end of the year and the water service started in December 2004. By February 2005, most households in the community were connected and the remaining ones were in the process of being connected.

Monthly bills include a fixed charge of Rs. 50 and an installment of Rs. 100 for the connection charge. Consumption of water is charged according to the rates (set nationally by NWSDB) shown in the table (5.1) below:

**Table 5.1 Water tariffs in Sri Lanka. Domestic Rates**

<b>Units consumed (cubic meters)</b>	<b>Rupees per unit</b>
1-10	1.25
11-15	2.50
16-20	6.50
21-25	20.00
Over 25	45.00
Monthly fixed charge	50.00

Petra is also responsible for sending the bills to each household and collecting the payment. For this, the company employs one full-time person and keeps an office close to the community.

Drainage was kept separate from the concession to Petra Engineering, but was also addressed within the same project. In the first months of 2005, a basic drainage system was constructed in the community, financed by UNESCAP.

Throughout this process, Sevanatha played a leading role. Its experience in working with urban low-income communities in Sri Lanka proved useful in community identification, community mobilization, identification of small-scale private entrepreneurs, the development of criteria for the selection of a private company, awareness creation among key partners about the pro-poor public-private partnership concept, familiarization of the private sector on the delivery of basic services, and not least supporting the process of building a partnership between the community and the private sector. Sevanatha also collaborated with the NWSDB to improve its procedures. This included the development of tender documents and the sales agreement. Sevanatha assisted Petra Engineering in the drafting of documents related to water application, billing and the agreement between the community and Petra.

Operational problems were mainly caused by delays in obtaining approval for the project from the Ministry of Urban Development and Water Supply, as regulations do not permit private-sector involvement in domestic water supply without special authorization from the Minister, delays in assessing tender documents, in the provision of individual water connections and in the operational work. Sevanatha helped the NWSDB and Petra overcome some of these problems by hiring an expert on legal matters and through community mobilization.

Lack of coordination between the institutions and a change in government caused an approximately 6-month delay in the laying of pipes, as the new government was concerned that this project would be seen as a precedent for broader water privatization in Sri Lanka.

The community (with help from Sevanatha), however, convinced the new Minister of Urban Development and Water Supply of the direct benefits of the project for the community as well as the additional benefits that would accrue to the country through its replication. The community considered this an empowering experience — an achievement gained through improved information sharing and negotiation skills.

Petra Engineering had no experience dealing with communities and small conflicts have occurred, despite Sevanatha's work as an intermediary. At some stages, the community complained about the delays in delivering the connections and lack of interest on the part of Petra in starting to deliver the water. Besides, during the first months of water delivery, some families complained of the very high water bills. Petra responded that the households in Halgahakumbura were still not used to individual metered connections and poorly managed their water supply.

Another source of friction was the site of Petra's office, which is not in the community, but in a nearby area where people from Halgahakumbura "do not feel welcome". As a result of these disagreements, a significant number of households was late with their payments of the water bill in the first months of the project, although the CBO tried to convince people to pay their bills on time. All these tensions were resolved by Sevanatha, but as Sevanatha's role ended in December 2004, the CBO will need to take this responsibility.

## **F. Financial arrangements<sup>3</sup>**

Petra made the necessary investments for the construction of the infrastructure inside the community (pipes and individual meters, mainly). It covers all operational costs and collects connection and water consumption charges.

The total investment by Petra amounted to Rs. 1, 712,825. Of this, Rs 500,000 came as a grant from UNESCAP, while another Rs.500,000 are in the form of a loan to be repayable to NWSDB at a rate of Rs. 125,000 per year in quarterly installments after the first year. The remaining Rs. 712,825 came from Petra's own funds.

Petra estimates the operational costs at Rs. 77,620 per month. Repayment of the loan to NWSDB amounts to another Rs. 10,416 every month.

Monthly revenues are estimated by Petra at Rs. 109,471, and are divided as follows:

From water consumption	Rs. 57 x 553 = Rs. 31,521
Fixed charges	Rs. 50 x 553 = Rs. 27,650
Connection charges (first 30 months)	Rs. 100 x 503 = Rs. 50,300

Based on these calculations (and making no allowance for non-payment of bills), Petra estimates gross monthly profits of Rs. 11,434.

The NWSDB made the necessary investments to connect its existing network to the new scheme: mainly bringing the water to the entrance of the settlement and installing a bulk

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<sup>3</sup> Average exchange rate for 2004: US\$1=Rs.101.194

meter to measure the water it sells to Petra (the amount was undisclosed). UNESCAP provided a grant of Rs. 1,000,000 to finance the construction of the drainage system.

It is also important to quantify the costs of the NGO's involvement in facilitating and coordinating the project, which Sevanatha estimates at US\$15,000 for the duration of the project.

## **G. Outcomes**

The main outcome has been the connection of 508 households to the water supply - something that some households had been striving for almost two decades. The water supply system, direct household water connections, and not least the new drainage system has brought about a range of benefits: saving of time and energy; an improved general quality of life and a sense of community ownership and responsibility.

Community members are pleased that land and property values have risen considerably and the environment has shown a marked improvement particularly because the new water supply system was immediately followed by improvements to the drainage system.

The second main outcome has been the change in the Government's attitude towards private participation in water distribution. The practice has meant a significant change from previous practice where bulk metres were given only for communal services, particularly to local authorities. Although there is still reluctance to repeat the experience and allow other private companies to distribute water in partnership with NWSDB, the Government has lent its support to the project, as indicated by the visits of the mayor and a minister to the project site.

The project objectives have largely been achieved, although perhaps not at the pace it was first envisaged. The main reason for the success of the project appears to be the commitment of the stakeholders and the mobilization of the community. The main reason for the delays could be attributed to the fact that both the community and the public utility had to adjust to operational arrangements that were entirely new to them. The private company could have invested more human resources at the beginning of the project to enable implementation at a faster pace.

## **H. Addressing the needs of the poor**

The objective of this practice is to bring a basic service to a poor area. Although the entire Halgahakumbura community could be defined as poor, about a third of the population could be considered extremely poor.

Some of the conditions imposed on the private company by the NWSDB to ensure that the poorer community members are not further disadvantaged are as follows:

- The connection charge of Rs. 3,250 is paid in installments (the first one of Rs. 250 and subsequent ones of Rs. 100 every month). This facilitates the connection of poor households, who have difficulties in paying large sums in one instalment.
- Monthly electricity fees are collected through an office that is next to the community, so people do not have to travel long distances (and lose income opportunities) to pay their bills.
- Although the agreement between the Water Board and Petra allowed the company to close all stand posts, this will only be done progressively, and not before all households are connected to the grid.

- The tender document encouraged the employment of local labour for all construction work.

The main improvement in the lives of the poor people (especially of women and children) is that they no longer have to wait at the stand posts to get the water and carry it home. The women in the community are especially happy about the time that they save because of the availability of water connections in their homes. Women estimate that they save from two to three hours a day because of the household water supply connection. Direct water connections have meant improved water pressure and more privacy for people who had no option but to bathe in public space.

Another benefit from individual water connections is that there will no longer be frictions and disputes between neighbours over the water from the few stand posts in the community.

The drainage canals that were built at the same time, have improved the local environment, and helped in preventing flooding and the proliferation of mosquitoes.

Because of the participation of the community in the practice, a sense of community ownership and responsibility has emerged.

The Community Action Planning process meant that water delivery was not treated in isolation but together with the rest of the problems facing the community. Although the project from UNESCAP and the practice that came out of it dealt exclusively with water delivery, Sevanatha managed to mobilize resources to deal with some of the other issues as well. For instance, a road leading to the community was repaired and the community obtained postal services for the first time thanks.

Another important benefit for the residents is the increased claim on the land that derives from this project. The people of Halgahakumbura have no legal title to the land they occupy. There does not seem to be an imminent danger of eviction, and the lack of security of land tenure did not stop the municipal authorities from granting permission to this scheme, nor was a concern to the Water Board or the private company. However, legal ownership of the land is a logical aspiration for the people and they perceive that having individual water connections enhances their claim to the land.

There are also potential negative effects. Since water collected from the public stand posts was free of charge, people in the community will have an extra expense every month as a result of this practice. The monthly water bills have a fixed component of Rs. 50 (plus Rs. 100 for connection charges in the first 30 months), and a variable component depending on consumption that Petra estimates will average at Rs. 57 (for a consumption of 20 cubic meters). The total amount of around Rs. 200 is affordable for most households in Halgahakumbura, but the poorest among them will find it hard to pay every month.

If a household fails to pay the bills and is eventually disconnected, they will no longer be able to use the public stand posts in the community (as these are supposed to be closed down) and will be forced to travel longer distances to fetch water.

## **I. Sustainability**

The practice is financially sustainable because the company is able to run a small profit with the current conditions. The main challenge is the continued willingness and ability of households to pay their water bills. During the first months of the project, an important number of households were falling behind in their obligations. Although this was

probably caused by some specific problems that arose in the early months of the practice, the capacity of the households, particularly the poorest ones, to continuously pay their bills cannot be taken for granted.

It is unlikely that the private company would have found the investment viable if not for the grant and loan offered. Petra suggests that their interest in the project was partly because of its 'innovative, public interest nature'. Although it is apparent that the current profit margin for the company is very modest, the company may see its future maintenance costs reduced with the support of the Community Development Council. Indeed, the Halgahakumbura CDC foresees a larger role for itself in project management and maintenance some time in the future — a proposition they are likely to make to the NWSDB.

If Petra finds that it is unable to make an adequate profit, it may propose to the NWSDB to operate in a larger number of locations and/or negotiate for better terms on the purchase of the water supply in bulk.

The practice is also environmentally sustainable, since by establishing metered connections, it discourages waste of water in the community.

## **J. Replication and up-scaling**

### **1. Potential for replication or up-scaling**

The practice would be suitable for adoption in any low-income settlement in Sri Lanka and beyond with the support of the local authority and facilitation by an intermediary like an NGO.

Replication is possible particularly for communities that have no water connections but are close to an existing water supply network. Otherwise, capital expenditure will be substantially higher. This condition implies that the practice is suitable for urban communities only. Besides, people living in the settlement must be willing and able to pay for the water they consume, as well as for all the connection charges. Finally, a private company willing to take the risk must be forthcoming. This proved difficult in this practice, where despite a substantial subsidy from ESCAP only one company effectively bid for the concession.

Replication would require the support of an NGO to play the role of coordinator/facilitator, at least in the initial phase. This is crucial for bringing the partners together and mediating in any conflict. It is important that the NGO is perceived as an impartial arbitrator in any dispute that may arise. Also, most communities are not as well organized and lack the resources to step into this role. Equally important is the role of the public utility and its commitment to a partnership with the private sector. Such a commitment may require agreement to more competitive rates for bulk water supply.

The financial sustainability of the practice would improve, if it could be up-scaled. It has been estimated that 1,000 households is the ideal size of a settlement for the company to recover the costs. Although there is no possibility to expand the number of households in Halgahakumbura or to include adjacent settlements in the scheme, the company can achieve some economies of scale by engaging into similar schemes in other areas of Colombo, and share some costs across schemes.

However, as with any practice involving community participation, there are limits to the up-scaling. Individual communities must retain a certain size for the community participation to be manageable. This does not mean that the same company cannot deal

with several adjacent communities, gaining economies of scale without losing on participation.

## 2. Policy issues involved in replication or up-scaling

The up-scaling and replication of the project would require a policy environment that facilitates public-private partnership. For example, the current tariff structure is not encouraging for private water distribution schemes. Current tariffs are highly progressive and water in bulk is more expensive than the retail price for small amounts. This project required a waiver from the NWSDB so that it could sell the water in bulk at a special discount price (Rs.2).

Another important aspect of the regulatory environment needed for replicating this practice is security of land tenure. Since a substantial investment is required from the private company, which can only be recovered through a five-year concession, and a substantial expenditure is expected from the households to install the pipes and individual connections, there must be a feeling that the families living in the settlement will not be relocated arbitrarily.

## **K. Conclusions**

The most important lesson from this experience is the ability and willingness that residents in a poor community have shown to pay a fee for their water connection rather than relying on free public stand posts. The poor realize that the time and energy that they spend in collecting water from public stand posts is worth more (in terms of leisure, study or foregone income) than the costs of establishing individual connections.

The intermediary role played by the NGO – Sevanatha - and the significant role adopted by the Community Development Council must be considered crucial for the implementation and the sustainability of the project. The involvement of the Community Development Council in all aspects of the project – planning, implementation and monitoring – is key to the success of the project. Moreover, government agencies should not be reluctant to involve non-governmental agencies in a development process such as this. The presence of the NGO facilitated the interaction between the NWSDB (the public utility) and Petra (the private company). The process has not been an easy one, but it would have been more difficult if a NGO had not been present.

## **L. Documentation**

Documentation of this case study was prepared during February 2005, after consulting officials of the NWSDB, Petra Engineering Services (Pvt) Ltd., the Sevanatha Urban Resources Centre, members of the Community Development Council and community members.

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## **VI. Community Contracts System**

### **A. Introduction**

A community contract is a procurement system, which involves residents in the planning and implementation of infrastructure provision to their own community. It is a partnership arrangement where communities play the roles of three actors – promoter, engineer and contractor – involved in the conventional contract system as well as the role of end user of the service provided. Beyond a procurement mechanism for the provision of infrastructure to the slums, it is also a tool to empower people to take control of the process of local level development.

The community contract system was introduced by the National Housing Development Authority (NHDA) of Sri Lanka in 1987 as a response to the failures in providing infrastructure and services through the conventional competitive tender-contract system, to the satisfaction of the concerned slum communities. Since 1987, community contracts have become a popular tool for many agencies in Sri Lanka as well as in some countries in Asia and Africa to have people actively participating in infrastructure provision.

Before the approach was introduced, the government often provided facilities (such as public toilet blocks) to shanty areas without any community involvement. As a result, the facilities were in the wrong location, were not maintained by the community and would quickly fell in disrepair; moreover, the community felt that private contractors tended to do poor-quality work. Frustrated by this, an urban poor community told NHDA officials that they could do a better job in both design and construction, if the NHDA provided the funds. To show its capacity, the community designed and built a well with financial and technical support from the NHDA.

This experience formed the basis for the approach known as the Community Construction Contract. Several government agencies, non-governmental organizations (NGOs) and municipal councils have used community contract procedures to provide infrastructure to slums. Currently, the Colombo Municipal Council (CMC) is in the process to incorporating the procedures into the municipal procurement system. The International Labour Organization (ILO) transferred the approach to Tanzania in Africa.

### **B. Background**

The Government of Sri Lanka started to provide basic infrastructure in slums and shanty areas after the Enactment of the Ceiling on Housing Property (CHP) Law of 1973. Housing units in slums were mostly under private ownership, but there was no proper agency to look after the shanties in the public areas when the CHP Law came into effect. Within Colombo city, about 16,000 shanty units had spread over 750 locations in 1979<sup>4</sup>. Shanties are illegal makeshift structures built mostly on public lands where people do not have access to basic services.

In 1979, four alternative courses of action were considered as policy by the Government in order to improve the quality of existing housing stock in Colombo: permanent upgrading; temporary upgrading; relocation on site; or relocation elsewhere.

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<sup>4</sup> Policy Paper - Slum and Shanty Upgrading in CMC by UDA 1979

According to the Municipal Ordinance, the Colombo Municipal Council (CMC) can provide basic services and infrastructure from its own budget for the use of ratepayers only. Even though people in slums might have been living in Colombo City for a long period of time, it was not legally possible for the CMC to provide infrastructure to these areas as people there were not paying rates to the CMC.

Having observed the above situation, the Policy Paper on Slum and Shanty Upgrading considered the following proposal for the improvement of the housing stock in Colombo: “The Urban Development Authority (UDA) should be responsible for overall planning. The UDA staff will do detailed physical planning. Close coordination will be maintained, especially with NHDA. Execution will be the responsibility of the Common Amenities Board (CAB) supervised by the UDA”.

Since 1979, the CAB has been mostly responsible for the provision of infrastructure in slums. Procedures followed by the CAB for infrastructure provision were based on the standard public procurement system. By 1985 CAB had carried out a considerable number of contracts based on these procedures.

**Box 6.1. Key features of the contract procedure followed by CAB, UDA and NHDA for construction of infrastructure in slums and shanty areas**

- Infrastructure designs were done by the UDA and NHDA.
- Estimates were prepared based on the Government approved rates.
- Open tenders were called for construction from registered and qualified private sector companies.
- After evaluation of the tenders, contracts for construction were awarded to selected companies.
- Water taps, access paths, sewerage and wastewater disposal systems formed the infrastructure offered to private contractors for construction.
- Residents of slums were not consulted in the preparation of the designs. Their participation was also not encouraged in the construction and maintenance of infrastructure that was built by private contractors.

Until 1985, the Urban Development Authority and the Common Amenities Board, together with the Colombo Municipal Council, were mainly responsible for the provision of infrastructure in slums. In 1985, the Slum and Shanty Improvement Programme of the UDA merged into the Urban Housing Sub-Programme of the Million Houses Programme implemented by the NHDA. Since then, the NHDA has been playing an important role in urban upgrading and infrastructure provision in slums.

By that time, communities were dissatisfied with the infrastructure provided by CAB, UDA as well as NHDA through commercial contractors. They were complaining that the infrastructure was of poor quality and that often did not meet the actual needs of the community.

In many cases, the infrastructure had been built in the wrong locations. Therefore, the majority of the people in those communities did not use the amenities and were not interested in their operation and maintenance. As a result, most infrastructure built by private contractors remained unused and deteriorated quickly.

During the construction stage, there was no arrangement to allow people to give their views on the design and the construction and there were delays in the commencement and completion of construction works by private contractors due to the complicated tender procedures necessary to hire them. People also complained that the cost of construction of infrastructure was high compared to their experience in building such infrastructures by themselves.

In view of the above, there was a need to search for alternative procurement procedures for the provision of infrastructure in slums and shanty areas in Colombo.

### **C. Initiating the practice**

By 1986, communities as well as officials attached to the NHDA and UDA were well aware of the poor quality of the construction, of the delays in the completion of the work done in slums by private contractors, and also of the complicated tender procedures necessary to hire private contractors.

During this period, the agencies gained some experience in construction of infrastructure in low-income housing areas by communities. As the experience accumulated, it was evident that communities were able to build common amenities for their own use with the help of public agencies. Unemployed youth in the communities were particularly eager to engage in such construction works.

The first community construction works had been organized in the Bandaranayakepura and Polwatta settlements in Kotte Urban Council area by the Slum and Shanty Division of the UDA in 1984-85. It had shown that satisfactory work could be achieved, using paid and unpaid community labour<sup>5</sup>.

However, the community construction procedures were first developed, based on the common well built by the Community Development Council of Wanathamulla (now Seevalipura) in Colombo. Because the community was dissatisfied with a common well that had been built by a private contractor earlier, it asked the Urban Housing Division of the NHDA for an opportunity to build the next common well.

Wanathamulla was one of the settlements identified for urban upgrading under the Million Houses Programme (1984 – 1989). The NHDA was receptive to the request of the Wanathamulla Community Development Council<sup>6</sup>. It organized a partnership workshop and worked out procedures for the granting of a construction contract to the Wanathamulla CDC in 1986<sup>7</sup>.

When the managers of the NHDA first developed the community contract procedures, this process was encouraged and supported by its local staff.

Key professionals of the NHDA involved in the construction contract process, mostly engineers and accountants, were, however, initially reluctant to share the responsibilities of infrastructure construction with low-income communities. They were of the opinion that community-based organizations did not have sufficient knowledge of construction work and also had no sound financial basis to initiate construction activities on their own.

Because Community Development Councils had no legal status, the Finance Department of the NHDA refused to give the CDC of Wanathamulla an advance to start the construction of its common well. Therefore, an international NGO called USA Save the Children Fund in Sri Lanka gave the CDC a loan to start the work. After it received payment from the NHDA upon the satisfactory completion of the first construction work of the common well, the CDC paid this loan back to Save the Children.

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<sup>5</sup> Supporting Community Based Housing – Sri Lanka Demonstration Project – CASE STUDY PART 1 / 2 UNCHS (Habitat) 1987/89.

<sup>6</sup> A CDC is a CBO elected by the community to be the channel between external agencies and community members for development works.

<sup>7</sup> Principal researcher of this study was the officer in-charge of Wanathamulla Upgrading Project from NHDA from 1985 to 1990

### **Box 6.2 Community Development Councils (CDC)**

A community development council (CDC) is a group of office bearers elected by households in the community. The CDCs in Colombo were first established under a UNICEF-assisted project by the Colombo Municipal Council in 1979. CDC formation was undertaken by the Public Health Department of the CMC according to a constitution prepared by the same department. CDCs, formed according to the guidelines of the Public Health Department, are registered with the CMC. However, CDC formation is not based on a statute passed by Parliament or the Provincial Council. Therefore, CDCs are still not recognized by the law as a legal entity.

However, the NHDA has taken into consideration several factors for awarding community contracts to CDCs in Colombo. They are:

- The continuous existence of CDCs as organizations in Colombo at settlement level since 1979;
- The annual election of CDCs in a democratic manner based on a common constitution under the guidance of CMC;
- The registration of CDCs with the Public Health Department of CMC;
- The CDCs' commitment to participate in settlement upgrading programmes being implemented by NHDA;
- The powers vested with General Manager and the Chairman of the NHDA, according to the Act of NHDA of 1978.

The NHDA quickly realized the advantages of community contracts when compared with the standard government construction contract system. The design of the infrastructure is done according to the needs and the requirement of the community and job opportunities are created in the community. Community contracts offer some residents the chance to use and improve their skills and to increase local level capacity in construction and management. Furthermore, the quality of the work is assured, because the community who builds the infrastructure will also use it, and as a result, the NHDA receives fewer complaints.

Community contracting has lower overheads than work by private construction firms and is therefore cheaper. Community construction contracts are also simpler and faster to process. The savings that the community makes from community contracts is deposited in a community fund, and this makes communities less financially dependent on the government.

The NHDA has, however, some hidden costs in carrying out community contracts, as it has to add more staff time for community training, auditing of financial records, and inspections of the construction. However, the benefits of the community contract system clearly outweigh the costs. Both the NHDA and communities have been satisfied with the achievements.

**Box 6.3 Step by step procedure for the implementation of the  
First Community Contract by the NHDA**

1. The CDC, along with the NHDA and possibly a cooperating NGO, identifies the needed amenity, its location and its mode of construction.
2. The NHDA assesses whether the CDC is capable of carrying out the project on its own. If it is, the NHDA contracts directly with the CDC. Otherwise, an NGO may be used as an intermediary between the CDC and the NHDA.
3. The CDC establishes a construction committee composed of two CDC officers and two other community members, preferably with experience in construction. The committee may include a NHDA technical officer and an officer from the procurement department to act as advisers.
4. The CDC signs a contract with the NHDA to undertake the work according to specified plans. Alternatively, an NGO may sign the contract and negotiate its own agreement with the CDC.
5. The CDC establishes a community fund by opening a bank account for which representatives of the CDC, NHDA and possibly an NGO are signatories.
6. On the basis of a proposal submitted by the CDC, the NHDA prepares plans, bills of quantities and lists of building materials and labour requirements. Cost estimates provide for 15 per cent of contingencies or overheads.
7. NHDA transfers an initial payment to the community fund. The amount may be 15 per cent of total costs, Rs. 5,000 or an amount sufficient to complete the first phase of the project. Alternatively, the CDC may initiate the project with its own reserves and later receive reimbursement from the NHDA.
8. The CDC recruits skilled and unskilled labourers from the community and pays them at its own discretion. Payments exceeding the estimated labour cost require NHDA approval.
9. The construction committee purchases the necessary materials and ensures the safe storage of the materials. Purchases exceeding the initial estimates require NHDA approval.
10. The construction committee is responsible for work supervision and quality control.
11. Members of the construction committee are personally responsible for any loss of funds and materials. In case of unsatisfactory performance, NHDA may refrain from providing any further funds or infrastructure to the area until the work is improved or completed or it may resort to legal action against the CDC.
12. The CDC can utilize the balance of the funds as it wishes. Preferably, the funds will be used to improve the community's living conditions.

#### **D. Operations**

The following section of the paper presents the community contracts carried out so far in the city of Colombo in terms of numbers, types of amenities provided and financial volume involved.

The NHDA has carried out about 115 community contracts with CDCs in the slums of the city of Colombo since 1989.

**Table 6.1: No. of Community Contracts Awarded in Colombo by the NHDA 1986 – 2004**

<b>Year</b>	<b>No. of CC</b>	<b>Key Programme in Colombo</b>
1986 –1989	65	<i>Million Houses Programme</i>
1990 –1994	43	<i>1.5 Million Houses Programme</i>
1995 - 2000	7	<i>Matching grant for urban upgrading</i>
<i>Total</i>	<i>115</i>	

*Source: Yap K.S. (1994), Pathirana (1990), Premakumara and Jayaratne(2004)*

Other organizations and special project units established at the Ministry level have also been involved in the promotion of community contract procedures for the provision of infrastructure in Colombo.

**Table 6.2: No. of Community Contracts Awarded by Different Agencies in Colombo 1986-2004**

Agency	Period	No. of CC
National Housing Development Authority	1986 - 2004	115
Clean Settlement Programme Unit (Ministry of Housing)	1997 - 1998	04
Urban Settlements Improvement Programme (Ministry of Housing)	1999 - 2003	08
Colombo Municipal Council	2002 - 2004	10
Sevanatha/Metropolitan Environment Improvement Programme/Colombo Municipal Council	1992 - 2004	21
<i>Total</i>		158

*Source: Premakumara (2004) and Jayaratne (2004)*

As a result of a pilot project under taken in 1992 in partnership with SEVANATHA, the World Bank-funded Metropolitan Environmental Improvement Programme (MEIP) initiated the Clean Settlement Programme (CSP) in Colombo. Although the Million Houses Programme in the 1980s had significantly improved access to housing for the low-income population, there was still a lack of proper infrastructure in upgraded settlements. The Ministry of Housing established the CSP Unit with assistance from the World Bank to replicate the Community-Based Environmental Improvement Initiative Model piloted by MEIP in Colombo. The CSPU adopted the Community Action Planning approach for settlement improvement planning and community mobilization. It used this approach for the provision of infrastructure for 6 slums in and around Colombo and awarded 15 community contracts from 1997 to 1999.

Also in 1999, with technical and financial assistance from the Japanese Bank of International Cooperation (JBIC), the Urban Settlements Improvement Programme (USIP) was established within the Ministry of Housing. The approach of this programme was very similar to CSPU. It selected five sites (of which three in Colombo) as pilot projects for on-site upgrading. By end of 2003, it had carried out community contracts in a total of eight slums in the city of Colombo.

Sevanatha, a local NGO involved in urban upgrading in Colombo since 1989, concluded community contracts from resources it generated in donor-funded projects for the implementation of Community Action Plans.

**Table 6.3: Types of Amenities Constructed through CC System by CDCs in Colombo 1986-1989**

Type	No. of CCs	Percentage (%)
Bating wells	4	6.2
Water stand posts	7	10.8
Toilet blocks	15	23.1
Community hall	9	13.8
Site offices	4	6.2
Surface drains	6	9.2
Garbage bins	2	3.1
Retaining wall	1	1.5
Foot paths	3	4.6
Boundary stones	1	1.5
Site clearance	2	3.1
Water supply lines	4	6.2
Repair works	5	7.7
Wooden benches	1	1.5
Earth filling	1	1.5
<i>Total</i>	<i>65</i>	<i>100.0</i>

Source: Pathirana (1992)

In the early period, the works done in Colombo through community contracts were simple, low-cost and for small amenities, and the CDCs were able to manage the construction with the skilled and unskilled manpower available within the community.

According to Premakumara (2004), community contracts after the 1990s have been awarded for construction of more technically complex works in Colombo (Table 6.4). The CDCs carried out works such as sewer systems with common septic tanks, wastewater drains and water distribution systems for which the communities needed engineering knowledge and close supervision by technical staff. Works related to water and sanitation formed the majority of the contracts, as they were labour-intensive and in big demand by slum dwellers.

**Table 6.4: Types of Amenities Constructed by CDCs in Colombo 1990 – 2002**

Type of Work	No. of CC	Percentage
Toilet blocks	7	11.3
Community hall	6	9.7
Drains storm and waste water	19	30.6
Water supply networks	22	35.5
Sewer line with septic tank	6	9.7
Earth filling	1	1.6
Boundary wall	1	1.6
<i>Total</i>	62	100.0

Source: Premakumara (2004)

Table 6.5 presents the number of community contracts awarded in Colombo by the different agencies since 1986 according to the value of the contract. It clearly indicates that the value of the community contract has gradually increased. During the period of 1986 to 1989, only 10 community contracts (7 per cent) had an estimated cost of the work higher than Rs 100,000. The value of the 39 community contracts (60 per cent) awarded in this period was less than Rs 50,000. Among them, 8 community contracts had a value of less than Rs 5,000.

**Table 6.5: Number of Community Contracts by the Value 1986 to 2004**

Value of the Contract (Rupees)	No. of Community Contracts					
	NHDA (1986- 1989)	NHDA (1990- 2002)	CSPU (1997- 1999)	USIP (1999- 2002)	SEVANATHA/ CMC (1993-2004)	CMC (2003 – 2004)
Less than 5,000-	8	-	-	-	-	-
5,001 to 10,000	7	1	-	-	-	-
10,001 to 25,000	13	5	-	-	-	-
25,001 to 50,000	11	4	-	-	-	-
50,001 to 100,000	16	3	1	-	7	1
Over 100,000	10	37	3	8	14	9
<i>Total</i>	65	50	4	8	21	10

Source: Pathirana, 1990: 40; Premakumara, 2002, Jayaratne. 2004

However, the estimated value of the 81 community contracts awarded since 1986 (51 per cent) was more than Rs 100,000 each. One of the reasons for the value increases was the government decision to increase the upper limits of contracts awarded to approved societies. In 1983, this amount was Rs 150,000, but in 1987, it was increased up to Rs 750, 000 and in 1994, it was increased again, to Rs 1 million. As of 2003, the Government of Sri Lanka can award community contracts up to a maximum value of Rs 3 million to approved societies.<sup>8</sup>

Some agencies awarding community contracts made some minor amendments to the procedures developed by the NHDA. The CMC decided to award contracts to CDCs on a negotiated basis within its general procurement system. The changes that CMC enacted within its system set an upper limit for the value of community contracts(Rs. 500,000) and called for tenders only from CDCs on competitive basis. Agreements between the CMC and the CDC are in the local language, and most of the clauses are similar to NHDA. Payments are made on measure-and-pay basis and there are no changes in the municipal payment system for community contracts. The Mayor of Colombo, as the CEO of CMC, and his officers who are involved in approving community contracts, are legally protecting, because the Finance Committee and the Council have to approve each contracts.

## **E. Outcomes**

An analysis of the community contracts system operated by different agencies can identify a set of common elements as achievements of the practice.

### **1. A demand-driven approach**

In most cases, community contracts have been offered to CDCs at the request of the community. Communities have made these requests either through their municipal council members or directly to the implementing agency. In these requests, CDCs often identified the most needed amenities for the community. Therefore, the CC system applies a demand-driven approach.

### **2. The poor organized in a CBO**

One of the main requirements to offer a community contract is that the people who are receiving the benefits must have a community-based organization. If it is a CDC, it should be registered with the CMC, and function as an active CDC. Active CDCs can be identified by the following characteristics:

- The CDC is formed according to a constitution under the guidance of CMC Health Instructor.
- The CDC conducts monthly meetings and keeps minutes and accounts .
- The CDC has a bank account that is maintained jointly at least by two office-bearers including the CDC Treasurer.
- The CDC carries out welfare activities for the benefit of its membership.

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<sup>8</sup> (According to Circular No. /FC/1/2204/1 issued by Finance Commission of Sri Lanka the power given to agencies under provincial councils, to issue contracts without following competitive tender to approved societies, has been cancelled)

### 3. Community contracts as capacity building mechanisms

The community contracts in Colombo included a component of community capacity building. However, the level of community capacity building differed according to the objectives of project and the organizations involved. Most organizations used the Community Action Planning workshop as the common capacity building method. In addition, government agencies applied a structured social mobilization process with the support of NGOs. It included the formation, strengthening and training of community-based organizations, especially on community contract systems. NGOs carried out a needs assessment of the community before a CDC undertook a community contract and designed some training sessions to suit its needs. The training included sessions on understanding of technical drawings, Bill of Quantities, construction methods, material purchase, stores management, books keeping, billing, measurement taking, labour management, and operations and maintenance.

### 4. Community negotiated prices

In most cases, the contract price was negotiated by the agency with the CBO. The rates used for the community contracts were not the standard rates generally used for competitive tendering. Estimates were first prepared based on the basic rates, and later a margin was added which kept the total value below the standard contract value. In most community contracts, the community was asked to contribute a part of the costs ranging from 5 to 20 per cent depending on the programme.

### 5. Recognition of NGOs

Community contracts under the CSPU, the USIP and the UPRP were awarded within the framework of a pilot project; the projects obtained the services of a NGOs as a partner organization. Activities in all three projects were successful, because the NGOs played the role of community mobilizer. In the case of UPRP, Sevanatha acted as a project implementer, in addition to their role of mobilizer.

### 6. Community contracts as a tool for community empowerment

The most important aspect of a community contract is that it is an effective tool for community empowerment.. The livelihood of the urban poor is sustained not only because of the availability of basic infrastructure, but also because of the change of attitudes and behaviour of actors involved in development process.

A system that considers people in slums as mere recipients and users of amenities built by the government would make such people dependent and poor. The community contract is a procurement system as well as a tool for building people's capacity to overcome obstacles to improved livelihoods and to access to institutional structures in society, rather than just an alternative procurement procedure.

### 7. Partnership for local development

A community contract is a partnership arrangement for local-level development. The basis for a community contract is trust and mutual understanding among the key partners. Unlike a commercial contract system, a community contract is an institution with procedures for different stakeholders to play a distinct role in local level development. The NHDA as well as the CMC introduced contractual formats to allow for the sharing of responsibilities with a CDC and NGOs that were exclusively the responsibility of the government under the old system.

## 8. Simple forms and formats

Most agencies do not consider CDCs as conventional contractors whose motive is to make profit from construction contracts. Yet, the agencies involved in community contracts expect CDCs to know the contractual procedures. Therefore, all agencies offering community contracts prepared simple contract formats in the local language, containing the most essential clauses only. In addition, the NHDA, the CSPU, the USIP and Sevanatha prepared most drawings and BoQs in Sinhala and/or English.

In the case of the UPRP, Sevanatha prepared a community contract file and a set of formats in Sinhala to enable CDCs to understand the contractual procedures and to be accountable to its members and supporting agencies.

Formats developed by SEVANATHA include:

- d. Community Request (CR)
- e. Drawings Sheet
- f. Cost Estimates/Bill of Quantities
- g. Technical Proposal
- h. Basic Information Sheet on Community Contract
- i. Community Contract Agreement
- j. Community Contract Hand Book
- k. Cash Book
- l. Tools and Equipment Book
- m. Goods Receiving and Issuing Notes Book
- n. Check Role
- o. Measurement Sheet
- p. Work Progress Bill
- q. Payment Summary Sheet
- r. Paying Voucher
- s. Reimbursement Bill
- t. Community Contract Progress Summary – Community Contract Profile
- u. Community Operations & Maintenance Plan
- v. Completion Certificate

## 9. Quality of outputs produced by CBOs through CC system

There are no documentary records about the quality of the work completed by CDCs under the community contract system. However, the experience of researchers and interviews conducted for the current study show that it was difficult find any work that was completed poorly by a community. Even in contracts awarded by the CMC, engineers and technical staff were happy with the quality of community contracts work. It was often mentioned that the works were much better than the work generally done by

commercial contractors in slums. Several factors contributed to this, among them the community ownership and control, as well as the responsibility taken by the CDC.

## **F. Conclusions**

The community contract procurement procedure was initiated in response to a request by the community in Seevalipura (Wanathamulla in 1986) to the NHDA. Since then, the system has been improved and used successfully by several other organizations for the provision of infrastructure in urban under-serviced settlements. It has been an effective tool for participatory decision-making and community empowerment.

The community contract procedure has been effective, because it provides an opportunity for the community to play the role of promoter, engineer, contractor and end user of the amenity. Under the community contract system, the community is no longer the mere recipient of an amenity built by a commercial contractor, but it becomes a key actor in the provision of amenities for its own people.

Based on the wealth of experience gained with community contracts in Colombo, it is clear that agencies can award community contracts without changing much in the existing legal framework.

For the community contract system to be successful and sustainable, the political environment must be favourable toward enabling, participatory local development processes that include a degree of decentralized decision-making power at the district, ward and community level. This implies that politicians and government officials need to change their attitude and play the role of facilitator in the provision of services rather than direct provider. All this can be achieved within a pro-poor political environment.

## **G. Documentation**

This practice was documented by during April 2005

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