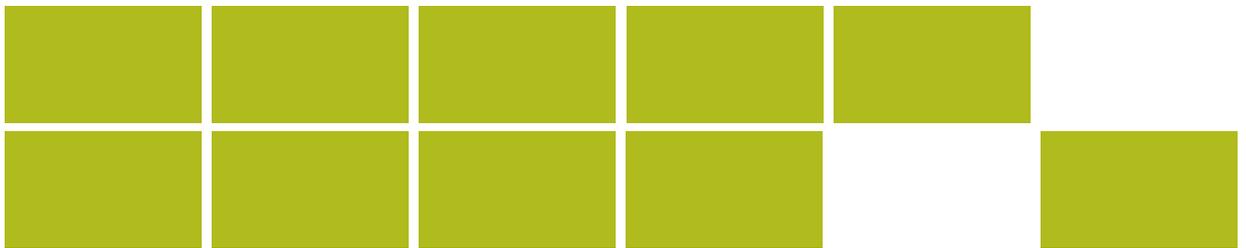


ADB

Japan
Fund for
Poverty
Reduction

Phnom Penh – Asian Development Bank
Partnerships for a Cleaner City



Lessons on Managing
the Urban Environment

Asian Development Bank



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Abbreviations

Currency unit – riel (KR)

ADB Asian Development Bank

JFPR Japan Fund for Poverty Reduction

NGO nongovernment organization

PCU project coordination unit

In this publication, \$ refers to US dollars.

Glossary

khan administrative district

sangkat village

Foreword



The Municipality of Phnom Penh takes great pride in presenting this publication, which was inspired by an earlier booklet, Foundation for Poverty Reduction through Urban Environmental Management. Rapid urbanization hinders the provision of community infrastructure and public services. Poor environmental sanitation, low productivity, and the general attitude toward hygiene and cleanliness have led to conditions that keep the poor out of the economic mainstream.

Typical of many Mekong cities, Phnom Penh suffers from flooding, poor drainage, and inadequate solid waste disposal. The public sector's limited capacity to provide basic infrastructure and the lack of civic awareness about the importance of environmental hygiene have prompted the municipality to seek ways to solve these problems using participatory processes. The Community-Based Environmental Improvements Project, funded by the Japan Fund for Poverty Reduction, was a direct response to these difficulties.

This project was designed using the learning-by-doing approach. Implemented quickly over 32 months, the project demonstrated outstanding results. A synergy of harmonious actions, including socio-environmental improvements, community infrastructure upgrading, interactive community participation, income generation, and promotion of self-help activities, promoted sustained poverty reduction at the individual, community, and societal levels.

I would like to express our sincere thanks to the Government of Japan and Asian Development Bank for their generous support, which improved the living conditions of the poor. It is my hope that the experiences and lessons learned will help create clean and functional urban environments for a better tomorrow not only for Phnom Penh but for other cities as well.

Handwritten signature of Kep Chuk Tema

Kep Chuk Tema
Governor
Municipality of Phnom Penh

Message from the Vice-President, Knowledge Management and Sustainable Development



During the Annual Meeting of May 2008, the Board of Governors of the Asian Development Bank (ADB) endorsed Strategy 2020, which provides a long-term strategic framework for our operations. With poverty reduction as the overarching goal, Strategy 2020 emphasizes the importance of forging partnership in our efforts to reduce poverty, and help our developing member countries (DMCs) into a more sustainable growth path.

The Japan Fund for Poverty Reduction (JFPR) represents a clear example of good partnerships that can lead to significant impacts on poverty reduction in DMCs. Since its establishment in 2000, JFPR has supported more than 100 projects, reaching into various parts of the Asia and Pacific region. From an initial contribution of \$90 million, the fund now stands at well over \$360 million.

In our region where almost 1.9 billion people live on less than \$2 per day, JFPR remains at the center of our efforts for ensuring that information on project outcomes are disseminated—so that the lessons can be effectively replicated elsewhere. Beyond the financial support, JFPR projects, by definition, are intended to be learning tools. They are meant to pilot and demonstrate new approaches, or test old approaches under new settings and circumstances.

Already, there have been many successful and encouraging results. This publication examines a successful project for the urban villages of Phnom Penh. Under this project, the physical environment for the beneficiaries in these villages was improved and access became easier; for some, incomes increased. People's health and physical well-being also improved. Piles of garbage along what were once-unpaved alleys had been replaced by greenery, and the stagnant water that brought disease and vermin had been drained with improved drainage systems.

These changes did not involve huge sums of money. More importantly, they involved strong participation from the affected people themselves. The project supported the local communities to be better organized and imbued with a purpose and vision, so that they have now become drivers of change in their communities. These are but some of the success stories that we have seen under JFPR.

Through this and future publications that will be part of the JFPR lesson-sharing sessions, we hope to disseminate the lessons we have learned, share experiences from JFPR projects, and distill the lessons learned.

On behalf of ADB Management, I extend our sincere thanks to the Government of Japan for this important facility which does not only enable us to help the poor, but also teaches us how to help the poor better.

Our congratulations to the Office of Cofinancing Operations for this important contribution to ADB's knowledge management efforts. We look forward to seeing more opportunities for disseminating JFPR projects in the future.



Ursula Schaefer-Preuss
Vice-President
Knowledge Management and Sustainable Development

Message from the Executive Director Board of Directors—Japan



The Government of Japan established the Japan Fund for Poverty Reduction (JFPR) in 2000, following the Asian financial crisis, to provide direct grant assistance to the poorest and most vulnerable groups in developing member countries of the Asian Development Bank (ADB). JFPR grants are meant to provide direct relief, while ensuring long-term benefits. Equally important, the grants are intended to demonstrate new ways to help the poor, which can be replicated in some areas, adapted to new conditions in others, or scaled up to assist larger populations.

It is with pleasure that we inaugurate this JFPR publication series to distill project results, experiences, and lessons learned. Through this series, projects assisted by JFPR can have a multiplier effect.

The Community-based Environmental Improvements Project in Phnom Penh is of special interest because it was the first project featured in the JFPR series meetings at ADB headquarters, shortly after I joined the Board. Excellencies Trac Thai Sieng and Mann Chhoeurn, both vice governors of the Municipality of Phnom Penh, accompanied by Wan Maung, the project team leader, shared with ADB staff the results and lessons from the project. On a mission to Cambodia with Megumi Araki, JFPR coordinator, we had a chance to go around the sangkats of Phnom Penh. We saw how the project transformed the villages and the dumpsite. We spoke with members of the community—among them a poor cobbler who made a living by repair-

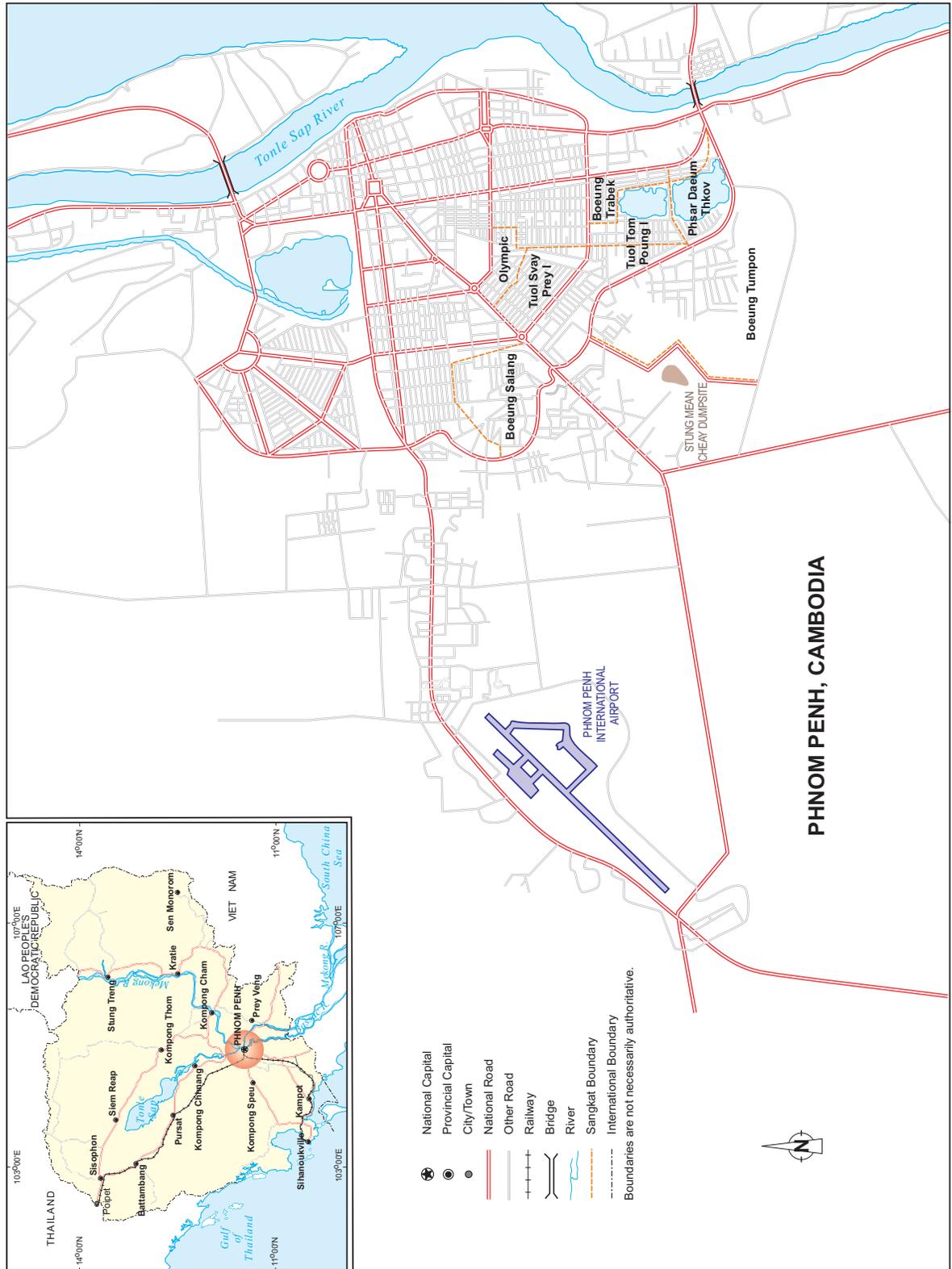
ing shoes salvaged from the dumpsite, a woman selling pillows made from scrap cloth, a waste picker. Without exception, they were thankful that the project had created a clean environment and given them the security of a better, safer livelihood.

On behalf of the Government of Japan, I thank ADB's Management and staff, as well as the Municipality of Phnom Penh, for using the Japanese people's financial assistance to serve the poor, and through this initiative more widely disseminate lessons from JFPR projects.



Masaki Omura
Executive Director
Board of Directors—Japan

Figure 1. Map – Phnom Penh, Cambodia



Introduction



This is the story of how seven poor communities used grant assistance¹ to overcome some of their dire living conditions and improve their livelihoods by working in partnership with the dynamic leadership of the municipality, district and village leaders, nongovernment organizations (NGOs), and the private sector. Persistent efforts evolved into a strong sense of community ownership. Despite a slow start, eventually many vibrant partnerships committed to creating a cleaner city environment developed, producing results that exceeded the project's original expectations.

¹ The grant was funded through the Japan Fund for Poverty Reduction (JFPR), administered by Asian Development Bank. It was approved in September 2002 in the amount of \$1.0 million and completed in November 2005.

The Challenge

Creating a Cleaner Urban Environment

Phnom Penh, the economic, political, and cultural center of Cambodia, is located on the confluence of the Mekong, Tonle Sap, and Bassac rivers. With a population of nearly 1.2 million, the city covers 375 km² and comprises seven administrative districts (*khan*) and 72 villages (*sangkat*). Four densely populated *khan*—Cham Karmon, Toul Kork, Mean Cheay, and Salang—constitute the 28 km² urban center with about 628,000 people. The population will reach 1.5 million by 2010 and 1.7 million by 2015, growing about 2.9% between 2005 and 2015. To create a socially just, ecologically sustainable, politically participatory, economically productive, and culturally vibrant city, the municipality must find a way to provide adequate services.

Decades of civil war disrupted the social fabric of Cambodia. The end of the Pol Pot regime in 1979 led to increased urban migration from rural areas where people were dying of starvation. Many of the people crowd together in squatter settlements and other poor conditions in and around the urban center. Most are displaced Khmer. There are various other minority ethnic groups. Lack of kinship ties, apathy toward government, and absence of shared values result in low social cohesion. The recent anti-Thai riots and political uncertainty following the 2003 elections are some of the legacies of this postwar trauma. Although the urban poor generally have higher living standards than the rural poor, they also feel more deprived and demoralized due to the big gap between the rich and poor. Some squatter settlements where people lack toilets and water supply are backed up against the



Everyone aspires to a clean, green city.

façade of expensive homes. Large two-story houses are sometimes located in poor neighborhoods where people struggle to earn a living. When people face such stark contrasts while living in unsanitary environments that lack basic services, the result could be more social problems and political instability.

Many of the city's working poor are street vendors, petty traders, and motor-bike-taxi drivers. A large number are women heads of households who work at menial jobs or earn subsistence wages. Many of these people lack basic education, cannot afford schooling, have no access to hygiene, and are generally in ill health, which keeps them outside the mainstream economy. Sickness, accidents, or involuntary unemployment cause further reduction of income and assets. Roughly 176,000 people—one in seven—must contend with adverse living conditions such as houses that flood and are accessible only by boat or makeshift footbridges. Storm water encroaching on the sewer system and clogging drains increases the risk of water-borne disease such as diarrhea and cholera.

Like many cities in the Mekong region, Phnom Penh needs a sustainable solid waste management system that can deal with complications due to flooding and poor drainage. Until the late 1990s, waste collection was grossly inadequate. The municipality generates about 930 tons of waste a day, 585 tons/day by households, and 345 tons/day by commercial and institutional establishments. However, when the project began, only 560 tons (60%) could be collected partly because roads and pathways, especially to poor households, were inaccessible due to flooding and standing water. The city's flat topography and the rapid unregulated development encroaching on natural waterways worsen pollution and flooding. Solid waste dumped in waterways causes flooding as well. In areas with no solid waste collection, piles of unsightly, stinking refuse attract vermin and flies, and demoralize the inhabitants. Improving the infrastructure, however, is not enough to solve the many problems these communities face. Social exclusion, a sense of powerlessness, and the unsanitary environment go hand in hand.

The municipality, constrained by inadequate managerial, technical, and an unsuitable institutional setup, relies heavily on the private sector for waste collection. Traditionally, private businesses hesitate to invest in low-income neighborhoods because of lack of incentives and the risks involved in enforcing contracts and sanctions. Since the second mandate of the Government, the national development strategy has shifted from emergency relief and rehabilitation to long-term partnership development that encourages broad-based grassroots participation whereby communities in need can learn to help themselves. An unfavorable precedent set by the history of a lack of communication and consultation during the planning of various public programs must be overcome to smoothly implement much-needed programs.

Participatory approaches, whereby communities are assisted to form self-help groups, can build trust and partnerships, create income-generating activities, and improve the environment.



Waste pickers at the municipal dumpsite work in a precarious and hazardous environment.



Poor drainage is not only detrimental to the city's visual environment but to public health as well.

Participatory approaches, whereby communities are assisted to form self-help groups, can build trust and partnerships, create income-generating activities, and improve the environment. Such approaches are relatively new in Cambodia and so far have had mixed results. Having a budget that rarely meets the requirements for operation and maintenance—let alone capital costs—means the municipality must seek innovative approaches to reduce poverty. By doing so, dependence on government to provide public services has begun to shift toward empowering communities to help themselves.

A milestone in local administration was reached when Cambodia adopted the Law on Commune Administrative Management whereby khan and sangkat leaders are elected by constituents. In theory, this will encourage local leaders to develop attractive programs to ensure their reelection. For this reason, the municipality found it relatively easy to secure the cooperation of sangkat leaders for the project. Although the consequences of the new law have yet to be evaluated, and guidelines for monitoring and enforcement are still being ironed out, the hope is that this law will promote better democratic processes, good governance, and decentralization, all of which will ensure the provision of necessary services.



Poor roads are difficult to access during the rainy season and dusty during the dry season.



The Pilot Project

By using a learning-by-doing approach, communities in the pilot project decided how their waste would be collected, transported, and managed.

Vision and Goals

Breaking the cycle of poverty by using participatory processes that enable simultaneous improvements in human, environmental, and social conditions was the theme of the project, with solid waste management its core activity. The project aimed to (i) establish and sustain self-help and participatory processes for community infrastructure improvements; (ii) change public attitudes toward sanitation and increase public appreciation for environmental hygiene; (iii) generate income and jobs through community-based solid waste management; and (iv) facilitate dialogue between the municipality and local governments, NGOs, and communities to enable collaboration and partnerships.

The Learning-by-Doing Approach

By using a learning-by-doing approach, communities in the pilot project decided how their waste would be collected, transported, and managed. Usually, household waste is picked up by waste collectors in pushcarts, brought to communal transfer stations, then picked up from these stations at intervals by the municipal dump truck or private operator for transportation to and final disposal at the municipal dumpsite where waste pickers sort the recyclable waste to sell at the recyclable goods market. This seemingly simple process was difficult to implement for a variety of reasons. The project had to gain community trust to develop partnerships. It also had to improve and maintain the infrastructure. Therefore, the project pursued a strategy to

- create partnerships between the community, local government, NGOs, and municipality;
- empower communities through participatory decision making and active involvement in project planning, design, and implementation;
- organize and mobilize communities to deal with limited resources and develop leadership; and
- help the municipality and NGOs provide the support to enable community self-reliance.

Site and Beneficiary Selection

Seven sangkats in some of the most densely populated districts in the urban center were selected for the pilot project: Boeung Salang, Boeung Trabek, Boeung Tumpon, Olympic, Phsar Daeum Thkhov, Tuol Svay Prey 1, and Tuol Tom Pong 1. The Stung Mean Cheay dumpsite where waste pickers live in squatter settlements was also selected. The total number of proposed beneficiaries was 113,311 people in 19,432 households.²

Table 1. Targeted Beneficiaries

Sangkat	Households	Population
Boeung Salang	1,558	9,452
Boeung Trabek	1,549	9,799
Boeung Tumpon	1,672	10,422
Olympic	2,208	13,575
Phsar Daeum Thkov	2,760	16,258
Tuol Svay Prey 1	4,535	24,768
Tuol Tom Pong	5,150	29,037
Total	19,432	113,311

Source: Municipality of Phnom Penh statistics, 2002

The rigorous site selection involved visual inspections. Five selection criteria were developed: (i) urgency and need for assistance, (ii) at least 20% poverty incidence, (iii) willingness to contribute 20% of construction costs for infrastructure improvements, and (iv) endorsement by the sangkat council. Based on these criteria, communities and their partner NGOs started a series of sensitization workshops to raise public awareness. Consultation meetings were held to discuss technicalities and to decide upon the roles and responsibilities of communities, sangkat councils, contractors, and NGOs. Evolving in stages, 34 agreed-upon subprojects emerged.

Project Components

The project design had four key components: (i) infrastructure improvements, (ii) public awareness campaigns, (ii) income-generating community-based solid waste management, and (iv) policy dialogue and information sharing.

² Municipality of Phnom Penh statistics, 2002.

Consultation meetings were held to discuss technicalities and to decide upon the roles and responsibilities of communities, sangkat councils, contractors, and NGOs.

The cost-sharing principle was based on the project's contributions of 80% and community contribution of 20% in cash or in-kind contributions such as labor or materials.

Infrastructure: Upgrading and Maintenance

The project helped upgrade, rehabilitate, and maintain roads, tertiary drainage, small bridges, and footpaths, and improve the Stung Mean Cheay dumpsite. Subproject costs took into account community organizing, training, and capacity building. The cost-sharing principle was based on the project's contributions of 80% and community contribution of 20% in cash or in-kind contributions such as labor or materials.

The goal was for communities to design and implement the infrastructure subprojects with some external assistance. NGOs served as intermediaries between communities and external stakeholders, facilitated community and sangkat council meetings, explained the objectives, and helped in planning, design, and implementation.



Households actively participated in developing community infrastructure.



Community residents working together on pathway improvements.



Implementation of community projects requires patience and flexibility.

After various workshops, meetings, and discussions with the selected communities, the project coordination unit had a clearer idea of the communities' needs and priorities, and their capacity and willingness to participate in devising workable solutions. Community members had their own ideas about rerouting paths, drainage, and upgrading the surfaces and lining of alleyways and canals. The project coordination unit consolidated the findings from interactive sessions and integrated the ideas into the project plan.

A baseline survey assessed the socioeconomic conditions of the households in the target areas to compile an inventory of infrastructure and community assets. Communities were consulted further to draw up a priority list of proposed improvements and to refine cost estimates and preliminary designs. The participating NGOs finalized the design and budget. They prepared detailed drawings and bidding documents with the sangkat council. At the same time, community members were trained to do simple construction work; some went on to find similar jobs. The sangkat councils supervised the construction but community members suggested ways to improve it.

Public Awareness Campaigns

To design and implement the best possible public awareness campaign, a household survey obtained baseline data on the socioeconomic conditions of the selected communities, assessed their level of environmental awareness, and prepared activities to raise public awareness. The data then served as a monitoring indicator to assess the project's impacts as it neared completion.

Communities were consulted further to draw up a priority list of proposed improvements and to refine cost estimates and preliminary designs. The participating NGOs finalized the design and budget.

Establishing a comprehensive community fee-based solid waste management system was a core activity.

The awareness campaigns aimed to educate the public to promote positive attitudes toward a cleaner environment, focusing on illegal dumping and trash burning, using trash bins instead of littering, and stressing the importance of solid waste management. These campaigns aimed to motivate participation and create a sense of community responsibility. The first step was to develop information, education, and communication materials. Selected NGOs worked on brochures, posters, and booklets, some translated into Khmer. Local radio and TV broadcasts, newspapers, and bulletins spread the word. The project distributed T-shirts and caps for public awareness. Subsequent activities—ranging from mass clean-up campaigns along the main roads to incorporation of environmental awareness into the school curriculum—even included puppet shows and quiz shows.



Public awareness campaign on environmental cleanliness.

Income-Generating Community-Based Solid Waste Management

Establishing a comprehensive community fee-based solid waste management system was a core activity. This system encouraged good practices in waste collection—transportation, segregation, recycling, and composting—and improved occupational health and working conditions along transport routes and at the dumpsite.

The project provided equipment and supplies—pushcarts, uniforms, boots, and gloves for waste collectors, as well as plastic bags, garbage bins and containers. Communities, through their sangkat councils, drew up regula-

tions for system sustainability: (i) how many waste collectors were needed, (ii) costs for waste collection, (iii) frequency of pickup from households, (iv) the location of transfer stations, and (v) fees for removing waste from these stations and carrying it to the dumpsite for disposal.



Waste collection in a sangkat generates income and helps keep the environment clean.

About 200 waste pickers and their families lived at the Stung Mean Cheay dumpsite. The project's self-help business promotion funds provided the waste pickers with start-up capital for small businesses such as garbage collection, segregation, and transportation.

NGOs assisted in forming self-help groups from among households in the selected sangkat and at the dumpsite. Some of these groups established small-scale enterprises to produce goods from hygienically processed recycled materials. Among these goods were handicrafts, bags, sandals, and simple furniture. Small business management skills such as basic accounting, marketing, and product pricing were provided along with technical skills.

The project helped establish a revolving fund to provide small loans for working capital to self-help groups and individuals. Two loan products with minimum interest rates and liberal terms and conditions were made available: (i) group loans for group activities such as the purchase of pushcarts, tools, and packaging equipment; and (ii) individual loans for investment in individual income-generating activities, such as the purchase of hand tools, protective gear, and basic input to produce new products from recycled materials. The microcredit funding was designed not only to deliver start-up capital but also to convince other microcredit financial institutions to give loans to waste pickers and others who had good repayment records.

Poverty cannot be reduced by technical and financial solutions alone. The root causes such as poor governance and lack of political commitment must be dealt with, not only by the Government but also by civil society.

Policy Advocacy and Experience Sharing

The project eased policy dialogue between the municipal and local government, NGOs, and communities. Poverty cannot be reduced by technical and financial solutions alone. The root causes such as poor governance and lack of political commitment must be dealt with, not only by the Government but also by civil society. This requires broad-based participation and sharing of experiences. The municipality used to be indifferent to NGOs and community initiatives. Through public discourse and consultation, the stakeholders came to see that by working together many of their objectives could be realized. This kind of sharing can also lead to local governments adopting similar plans to improve their community infrastructure. Therefore, educating the public through workshops, the Internet, and publications is of utmost importance.

Partnerships



Key Stakeholders

During the project’s design, four main categories of stakeholders were identified: the communities, the government (public sector), NGOs, and the private sector. The municipality served as the executing agency by providing policy directions, developing strategies, and facilitating the project’s activities. Daily operations were run by a project coordination unit. Khan and sangkat council representatives liaised and negotiated on behalf of community members, organized and supervised community facilitators, and managed community activities. Experienced NGOs, both international and local, used their expertise to mobilize communities and local resources, helped build community capacity, and provided technical advice. Cintri Cambodia, Ltd., a for-profit waste management firm granted monopoly rights to collect and dispose of solid waste, represented the private sector. Cintri had a 50-year contract for this service, which began in 2001.

Cooperation between stakeholders to establish community-based solid waste management in impoverished neighborhoods initially had little appeal. However, after persistent—albeit challenging—efforts made by the project coordination unit, partnerships slowly emerged.

Community Empowerment and Mobilization

Trust building was essential to enlisting cooperation and participation. But trust does not come easily to survivors of civil unrest, displacement, and hardship. Results of a poverty assessment conducted by an independent consultant indicated that people in the selected sangkat wanted to participate in community activities, but because many people were spending a great deal of time looking for food, they urgently needed jobs. The assessment suggested that the poor lack confidence in local administration. With community meetings and outreach, the project and NGOs worked with communities to define program goals, identify target groups, and conduct socioeconomic surveys to assess needs, priorities, and problems facing households and communities.

Sometimes during the consultations, people disagreed over what improvements were necessary. Despite repeated sensitization workshops, many people still had a “wait and see” attitude. As the construction work gradually progressed, it was noisy, dusty, and unsightly. Work done during the rainy season made roads impassable. This compounded community reluc-

Cooperation between stakeholders to establish community-based solid waste management in impoverished neighborhoods initially had little appeal.

Trust building was essential to enlisting cooperation and participation. But trust does not come easily to survivors of civil unrest, displacement, and hardship.



Gradually, as people understood that because they were sharing the costs they could expect good quality, the sense of ownership became so strong that some residents inspected the work every day “to make sure the contractors are doing it right.”



High school students reading the project brochure.

tance. Communities and their leaders were involved in discussions about their concerns, including their dire environmental conditions, the inability to meet expenses for sudden illness or injury, the low educational level, and lack of confidence dealing with government and outside agents. Based on community input, the project initiated strategies to build the capacity of communities and empower them, including actively involving the community in preparing project proposals to improve infrastructure. Sangkat helped select the construction work to be done and decided how it would be done. Community leaders mobilized local resources and community contributions for infrastructure improvements. Attendance at meetings varied. Initially, the village chief, staff, and a few household members attended, usually no more than 10 people. Later on, up to 50 people attended as the project gained their trust. In particular, more women began to participate.

Beneficiaries of all subprojects were consulted extensively to develop proposals and bids. These consultations enabled greater community involvement in identifying priority subprojects and their design and implementation along with deciding how maintenance would be carried out upon project completion. Communities were trained in construction and bidding procedures on work that included developing and upgrading of roads, footpaths, drainage, sewers, and footbridges. Villagers were enthusiastic once they saw improvements. Gradually, as people understood that because they were sharing the costs they could expect good quality, the sense of ownership became so strong that some residents inspected the work every day “to make sure the contractors are doing it right.”

As agreed, the communities committed either cash or labor. Collecting cash contributions was slow until NGOs, working with village chiefs and communities, set up a collection method. The village chiefs prepared a list of households with due-payment rate as agreed (mostly as per ratio of the length of road or drainage lines). Originally it was planned that bidding would happen only after 100% of community cash contributions were collected. Once it became clear that collection would take time, work proceeded upon receipt of 50% of cash contributions. This entailed considerable waiting time. Because most of the selected sites were in low-lying areas, construction was impeded during the rainy season. When time began to run out, bidding had to be done before the contributions were received.

Sangkat councils were given the authority to sign contract agreements with selected contractors. The technical staff of the NGOs helped the sangkat councils and community leaders manage and monitor the construction work, and taught them the basic principles of maintenance and management.

The project, NGOs, and sangkat councils made a joint final inspection of the completed subprojects, followed by a symbolic handover of subproject facilities to the sangkat councils. This handover acknowledged community ownership of the facilities along with the responsibility for maintenance and management. It was made clear that the concept of community-based management did not imply that the communities had to maintain and repair the facilities by themselves. Instead, the aim was to create responsible communities. These communities would ensure this work would be done through close and active cooperation with the responsible technical agencies and higher authorities. The project expected responsible communities to share what they had learned with neighboring communities.

Collaboration with Nongovernment Organizations

The primary role of NGOs was to strengthen stakeholder participation, enhance transparency, and access information to build institutional capacity and support. Their grassroots operations and expertise improved development efforts. The NGOs were crucial in facilitating discussions, improving community skills, and mediating between communities and local authorities. Despite variations in the quality of NGOs as well as the chemistry involved in the working relationships with communities, their overall presence created an atmosphere of cooperation and coordination between service providers and beneficiaries.

People's Research and Development, for example, developed public awareness materials that emphasized practical measures to maintain a clean,

healthy environment and good sanitation practices. They helped form sangkat management teams; assisted with household surveys and fee classifications; recruited and trained community-based waste collectors; supervised construction of temporary garbage bins; and were instrumental in community mobilization, discussions, and education sessions on primary waste collection procedures.

Because the community-based solid waste management system was a relatively new concept, it was not well understood. Low-income communities wanted to improve their environmental sanitation conditions but were not sure how to proceed, who would have what responsibilities, and how much the services should cost. Many households already paid surcharges on their electricity bills for waste that was never collected. NGOs assisted in forming self-help groups to inform the public and solve the problem. The project supported the work of NGOs by providing equipment, tools, uniforms for 100 community waste collectors, and temporary waste bins. The project helped NGOs set up management committees to conduct waste survey and fee classifications.

All told, perhaps the greatest contribution of NGOs was in helping mobilize communities, a key task when the project started. This was achieved through a step-by-step approach starting with the consultation process, ultimately aiming to create self-mobilization communities for the long term. For the sangkat, these steps were (i) explaining project objectives, identifying target groups, and defining subproject boundaries; (ii) conducting surveys in the selected areas; (iii) assessing needs, talking about problems, and setting priorities through participatory means; (iv) conducting meetings and helping form community development committees; (v) conducting workshops and training to build community capacity, leadership, negotiation skills, proposal and budget writing, and other empowerment strategies; and (vi) organizing exchange visits between communities and setting up a monthly meeting of all groups to exchange ideas and build partnership.

Table 2. Participating NGOs and Outputs

Participating NGO	Year	Scope of Work	Outputs
Handicap International Pksar Daeum Thkov	2003	Community mobilization and infrastructure improvements	Built community capacity; improved community infrastructure
People's Research and Development Tuol Svay Prey 1, Boeung Trabek	2003	Community mobilization and infrastructure improvements; consultation workshops	Built community capacity; development of IEC materials
Community Sanitation and Recycling Organization All sangkat micro-credit lending	2003– 2004	Community mobilization and infrastructure improvements;	Built community capacity; improved community infrastructure
Cambodian Labor Association Boeung Trabek; Tuol Svay Prey; Pksar Daeum Thkov	2003– 2005	Community mobilization and infrastructure improvements; public awareness campaigns; consultation workshops	Built community capacity; improved community infrastructure
Socio-Economic Development Organization Tuol Tom Pong 1; Boeung Tumpon	2004– 2005	Community mobilization and infrastructure improvements; public awareness campaigns	Built community capacity; improved community infrastructure
Urban Resource Center Olympic; Boeung Salang	2004– 2005	Community mobilization and infrastructure improvements; public awareness campaigns; micro-credit lending	Built community capacity; improved community infrastructure

Private Sector Involvement

When the project began, the solid waste collection services were limited to economically profitable areas, leaving many areas in the city without service. This was especially true for poor communities and squatter settlements where vehicle access was difficult due to road conditions. City-wide solid waste was collected by the Phnom Penh Waste Management Authority (30%), Cintri (60%), and small private waste collectors (10%). Initially Cintri saw the project as a threat to its operations and lodged a formal complaint to both the city and ADB. Cintri thought the municipality would use the project to strategically dilute its legal rights as the major private contractor of waste collection management even though it was aware of the problems in hard-to-access areas.

At the early stages, some communities were reluctant to cooperate with this waste collection system until after intensive discussions took place, information was shared, and the system operations and fee collections were improved.

The proposed waste collection system used pushcarts, communal storage containers, and transfer stations. Cintri would pick waste up from the transfer stations and carry it to the municipal dumpsite. The project organized and trained the community waste collectors with management done by sangkat councils. Cintri managed the waste collection fees. The sangkat council collected the fees. Sangkat councils and waste collectors received 35%.

Contracts between Cintri and three of the sangkat councils were signed on 27 December 2004. Implementation was not always smooth. The household wastes were collected and taken to the transfer stations. Cintri scheduled daily collection on main roads, but only 3 days a week in other areas. Occasionally, pickup delays occurred and nearby residents complained about the smell and unsightly heaps. Gradually, Cintri maximized its capacity, aiming to remove all waste on scheduled collection days.

At the early stages, some communities were reluctant to cooperate with this waste collection system until after intensive discussions took place, information was shared, and the system operations and fee collections were improved. Cintri actively cooperated by participating in fee classifications, sometimes making on-the-spot negotiations, sending its representatives to weekly sangkat council solid waste management team meetings, and establishing open and direct communication phone lines between these teams and Cintri management.

Women's Participation

The role women play in the national economy and in the income and well-being of their households is acknowledged in ADB's country strategy and program for Cambodia (2005–2009). Most women are self-employed in small, informal enterprises. They generally lack access to resources and assets such as credit, land, and legal protection. The project promoted women's participation and considered women's needs in the planning, design, and implementation of project activities. Steps were taken to ensure adequate representation of women in consultations.



Community meetings have a large proportion of women participants.

Women's participation was a highly recognized part of the project success. Women organized meetings, identified and prioritized community infrastructure improvements, and pointed out potential borrowers for microcredit loans. Because of close interaction with their community's households, women spread information by word of mouth. They were active in public campaigns, skills training, and participating in women-only discussions on sanitation and health. With project support, women took on community leadership roles. Although it may not be solely attributed to the project, more women began to serve on sangkat councils.

Donor Collaboration

An important category of stakeholders not directly involved on a day-to-day basis was the donor community. The steady amount of foreign aid coming into Cambodia as well as the Government's pursuit of local government reforms encouraged the venue and incentives for the emergence of NGOs.

Donor assistance was instrumental in obtaining external resources. Phnom Penh requested ADB support for an innovative environmental improvement program for the poor that would create jobs and expand the community-based solid waste management system. The project cooperated with other external donors on public awareness activities, the preparation of a solid waste master plan, and training in food processing.

Women's participation was a highly recognized part of the project success.

Government Facilitation

The city administration is divided into three levels: city, khan (administered by the khan government), and sangkat (administered by the elected sangkat council). Khan departments hold technical, supervisory, and administrative roles. The sangkat councils, headed by the sangkat chief, manage community project activities. Sangkat project management committees are organized under the close supervision of sangkat chiefs.

Through the municipality's dynamic leadership, communities were encouraged to actively participate in environmental improvements to gain a sense of ownership and responsibility for the sustainable operation of community-based waste collection services.

Workshops promoted the importance of collaboration between NGOs, the private sector, and communities. Historically, the municipal government was indifferent to NGOs and community initiatives, but in light of scarce resources, they were eager to elicit participation. Community-based initiatives focusing on local participation and consensus building were formulated and implemented within the framework of national development policies and programs. The departments of environment, health, and education provided vocational and technical training, market information, and information on microfinancing availability.

Project Impacts



The target area’s total population was 113,311 (19,432 households) with 34,300 direct beneficiaries (6,240 households). With a total project cost of \$1,035,075,³ the investment per person was \$30.25. Toward the end of the project, the project coordination unit assessed the project’s impact on poverty. It also interviewed local government and community leaders and conducted focus group discussions with the youth, women heads of households, and waste pickers. Before-and-after photos were taken.

The impact assessment was compared with the baseline survey. The sample size was 302 households (5.4% of the total population). Within each group, a random sampling of 30 or more were selected. To keep the data comparable, the respondent households for both surveys remained the same. After questionnaires were successfully tested, a team leader supervised the five people trained to collect data. The surveys focused on these socioeconomic indicators: (i) household members and number of dependents, (ii) income, (iii) household expenditures, (iv) access to microcredits, (v) household assets, (vi) provision of basic services, (viii) health care, and (ix) perceived and actual benefits to affected households.

Table 3. Survey Respondents

Sangkat	Number of respondents				Total
	Component 1	Component 2	Component 3	Component 4	
Boeung Salang	33	22	18	12	85
Boeung Trabek	0	23	0	0	23
Boeung Tumpon	40	20	14	15	89
Olympic	0	0	23	0	23
Phsar Daeum Thkov	48	0	0	16	64
Tuol Svay Prey 1	12	0	6	0	18
Total	133	65	61	43	302

Source: Poverty Impact Assessment, Project Coordination Unit, Municipality of Phnom Penh
 Component 1: Infrastructure Upgrading and Rehabilitation; Component 2: Public Awareness Campaigns
 Component 3A: Micro credit Provision; Component 3B: Community-based Solid Waste Management

³ The amount does not include the Municipality of Phnom Penh’s in-kind contributions of around \$260,000 equivalent, which covers office space, staff salaries, and local transportation.



From 2004 to 2005, the average income rose 40.2%, from \$167.70 per month to \$235.20. Average monthly expenditures increased by 17.9%. For the 426 families engaged in solid waste activities, including waste pickers' families who received microcredit loans,⁴ the average monthly savings went up nearly \$8. As a result of increased income, spending on food rose 6.8% and spending on water rose 11.5%. Health care expenditures went down 27.6%, an indication of improved health. Entertainment expenditures went up 42.4%, showing that households could afford nonessentials.

Table 4. Change in Income and Expenditures

in US\$ unless stated otherwise

Indicator	Baseline survey 2004	Impact Assessment 2005	Difference	Change (%)
Average monthly income	167.70	235.20	67.50	40.3
Average monthly expenditure	129.28	152.45	23.17	17.9
Average savings	34.54	42.48	7.94	23.0
Families with insufficient income	54.50%	31.40%	-23.10%	

Source: Poverty Impact Assessment, Project Coordination Unit, Municipality of Phnom Penh

Table 5. Change in Monthly Expenditure Patterns

in US\$ unless stated otherwise

Type of Expenditure	Baseline survey 2004	Impact Assessment 2005	Difference	Change (%)
Food	64.27	68.64	4.37	6.8
Water Supply	5.20	5.80	0.60	11.5
Health care	11.38	8.24	-3.14	-27.6
Entertainment	5.02	7.15	2.13	42.4

Source: Poverty Impact Assessment, Project Coordination Unit, Municipality of Phnom Penh

Both environmental sanitation and residents' perceptions of their environment improved. Before the project, 34.2% of respondents had access to waste collection services. Afterward, 94.2% of the respondents had these services. Satisfaction with waste collection increased significantly. The 2004 baseline survey indicated that only 33.8% of respondents were satisfied with waste collection services. Only 32.4% were satisfied with Cintri. At the end of the project, 77.4% were satisfied with primary waste collection

⁴ The Self-Help Business Promotion (SHBP) Fund, established with project contributions of \$100,000, provided loans. Upon project completion, Phnom Penh established the SHBP Fund Implementation Unit and continued microcredit activities whereby 396 clients continue making regular payments.

and 69.2% with Cintri. Residents indicated increased satisfaction with the elimination of smell from sewage and polluted waterways; 70% were dissatisfied at the beginning. By project completion, only 12% were dissatisfied.

Table 6. Change in Level of Service and Satisfaction

figures in %

Service/Satisfaction Level	Baseline survey 2004	Impact Assesment 2005	Difference	Change
Access to waste collection services	34.2	94.2	60.0	175.4
Waste separation	28.0	30.0	2.0	7.1
Satisfaction towards community waste collection services	33.8	77.4	43.6	129.0
Satisfaction towards secondary waste collection services	32.4	69.2	36.8	113.6
Illegal dumping or burning	85.0	13.0	-72.0	-84.7
Participation in community cleanup activities	18.3	83.7	65.4	357.4

Source: Poverty Impact Assesment, Project Coordination Unit, Municipality of Phnom Penh

House rents rose by 52.1% and land values increased 38.1%. The appearance of housing and communities improved markedly. A qualitative assessment of residents indicated that improvements make people more inclined to invest in and upgrade their homes and neighborhoods.

Community Infrastructure Improvements

The subprojects comprised community road construction and upgrading (concrete and laterite), tertiary drainage construction with diameters of 50–60 cm, and a wooden footbridge. A total of 34,292 people benefited directly. At the end of the project, cash and in-kind community contributions of \$35,544 (99.1% of the required amount) were received.

Table 7. Summary of Community Infrastructure Built

Sangkat	Beneficiaries	Sub project					Total
		Laterite roads	Lane concrete	Tertiary drains	Covered drain	Foot bridge	
Boeung Salang	1,944	1	2	5	0	0	8
Boeung Trabek	0	0	0	0	0	0	0
Boeung Tumpon	13,835	0	0	3	0	0	3
Olympic	794	1	0	2	0	0	3
Phsar Daeum Thkov	10,609	0	6	4	1	1	12
Tuol Svay Prey 1	2,870	1	1	2	0	0	4
Tuol Tom Poug	4,240	0	0	4	0	0	4
Total	34,292	3	9	20	1	1	34
Quantity		778 m	1,381 m	6,099 m	1,833 m	186 m	
Project contributions (\$)		10,516	24,786	103,216	1,833	2,318	142,669
Community contributions (\$)		3,351	6,227	25,496	0	0	35,074
Total (\$)		13,867	31,013	128,712	1,833	2,318	177,743

Source: Project Coordination Unit

Note: Sangkat Boeung Trabek eventually withdrew from the project because of unresolved resettlement issues.

Since the project's inception, land prices increased from around \$25 per m² to \$60 for marginal areas. In the more strategic locations, average land prices went from \$120 to almost \$200 per m². Improvements in community infrastructure, although not quantified, included creating temporary jobs in construction work, housing development, and multiplier effects on small local businesses. Increased community capacity to improve infrastructure, trust resulting from the building of partnerships, and greater social cohesion all led to greater dignity and self-esteem. This could be seen in neighborhood beautification such as planting of shrubs and grass, improved lighting, and general cleanliness.

Although not within the project's scope, water supply, electricity, cooking fuel, and housing quality improved notably. Once the environment was improved and people had basic services, individuals and households took the initiative to improve their living conditions. These improvements attracted businesses such as print shops, eateries, and small groceries.

In the following case studies and pictures, the Project documented community infrastructure conditions before and after project implementation.

Case Study: Economic Opportunities

Si Tha, a 38-year-old widow with two daughters, lived in Phsar Daeum Thkhov. The oldest daughter is a garment factory worker who lives with her husband in Dangkor Khan on the outskirts of Phnom Penh. Her youngest daughter is a high school student. Si Tha sold groceries nearby but did not earn enough. She wanted to sell her house and return to Dangkor Khan where she had inherited a plot of land from her parents. If she moved, she would be close to her daughter and son-in-law's work place. However, no one wanted to buy her house because it flooded during the rainy season. After the road and drainage improvements, she sold her house for \$40,000. She used around \$10,000 to build a new house. Another \$900 went toward purchasing and improving a grocery stall, including operating capital for goods. She spent \$700 for a new motorbike for her youngest daughter. Si Tha now makes a better living and said without the road and drainage improvement, changing her life would have been difficult.

Source: Project Coordination Unit, Municipality of Phnom Penh.



Footbridge construction. Before (left): Unsanitary conditions underneath the wooden houses and inaccessible walkways pose health risks and hazards. After (right): A wooden footbridge was built, greatly improving living conditions. Location: Psar Daeum Thkhov.

Partnerships for a Cleaner City



Concrete road pavement. Before (left): Huge gaps and erosion were dangerous for pedestrians and vehicles. This road was impassable during the rainy season. After (right): Bamboo-reinforced road surface pavement improved the roadway's function and appearance. Location: Boeung Tumpon.



Drainage rehabilitation. Before (left): The open unmaintained drain was a huge eyesore. After (right): The drain was cleaned, repaired, and concrete covers were put in place. The drain is functional, and the school (right) planted grass to beautify the surroundings.

Case Study: Improved Drainage Increases Land Values

Hin Thouk, a 59-year-old head of household, used to sell food and drive a run-down motorbike taxi. Then he decided to stay home to take care of his grandchild and two daughters. One earns a meager salary as a private school teacher and the other is a worker. He used to borrow money from usurers at a high interest. The family could not earn enough money, so he put about 400 m² of his land up for sale at \$10,000. No one made an offer because the road in front of the property flooded, at times as high as 3 meters, and drained slowly. After the road and drain improvements, many clients offered to buy his land for \$60,000. Instead of selling, he made an agreement with a contractor to build three shop houses on the land, sharing the \$45,000 profits from the sale. He lived in one unit and rented the ground floor for \$150/month. The rent money went toward purchase of a new motorbike and paying off his debt. He used the remaining money to buy more land as an investment. Hin Thouk was very happy with the project.

Source: Project Coordination Unit, Municipality of Phnom Penh.

Public Attitude and Behavior Change

The project sponsored public awareness campaigns and house-to-house education activities, along with trainers and community facilitators. Through simple language and easily accessible examples, the campaign led to changed attitudes, a better environment, and an understanding of the importance of an efficient solid waste management system.

Incidence of illegal dumping went from 85% down to 13%; 84% of survey respondents felt the environment had improved. The voluntary clean-up activities resulted not only in a cleaner environment but also in civic pride. Before the project, for example, littering and dumping in the canal were rampant. After raising public awareness, people threw less trash into the waterways.

Incidence of illegal dumping went from 85% down to 13%; 84% of survey respondents felt the environment had improved.

Table 8. Summary of Community Contributions

figures in US\$ unless indicated otherwise

Sangkat	Commitment	Actual	Percent
Boeung Salang	7,274	6,954	105
Boeung Trabek	0	0	–
Boeung Tumpon	7,176	7,176	100
Olympic	4,515	4,515	100
Phsar Daeum Thkov	6,684	7,309	91
Tuol Svay Prey 1	2,868	2,868	100
Tuol Tom Poug	6,252	6,252	100

Source: Project Coordination Unit

Note: Sangkat Boeung Trabek eventually withdrew from the project because of unresolved resettlement issues.

Solid Waste Management

The community-based solid waste collection system that started on 1 January 2005 was one of the project's important achievements. At first, Cintri agreed to enter into a partnership with three sangkats to collect and transport their solid waste. The agreement (i) authorized sangkat councils to oversee primary household waste collection and transport to transfer stations using pushcarts; (ii) affirmed Cintri's responsibility for secondary collection from transfer stations to the dumpsite; and (iii) affirmed the Japan Fund for Poverty Reduction's commitment to construct 72 transfer stations, and provide supplies and equipment. Revenue sharing from waste collections was based on 65% for Cintri and 35% for sangkat. A supervisory committee comprised of Cintri, the municipality, and the project coordination unit oversaw operations. For primary collection, the project provided 48 pushcarts, 190 garbage bins, and 300 uniforms and pairs of gloves for waste collectors.



Pushcarts provided by the project.

Collaboration between communities and the private sector, along with responsive management of sangkat leaders, created a system that resulted in improved waste collection for the three targeted sangkats, covering from 40% to 93% of households. Eventually all sangkats signed contracts for waste removal.

Table 9. Revenues from Waste Collection

monthly figures in US\$

Sangkat	Fee Collection		Total
	By Sangkat	By Cintri	
Psar Daeum Thkov	1,866	3,465	5,331
Boeung Salang	2,402	4,462	6,864
Boeung Tumpon	2,192	4,071	6,263
Total	6,460	11,998	18,458

Source: Project Coordination Unit

Note: The fee-based waste collection system was first tried in the above three sangkats.

Dumpsite Improvements

A typical day at the Stung Mean Cheay dumpsite is chaotic. Waste pickers chase the dump truck as it arrives. They shove one another as the dump truck unloads, disregarding danger to retrieve paper, plastic bottles, and anything that can be sold. Suffocating from methane, accidentally being run over by the truck, or getting trampled, cut, or bruised make this is a dangerous occupation, especially for women and children. Increasing safety became a priority at the dumpsite where open, haphazard, inevitably hazardous dumping goes on.



The project was concerned with the safety of waste pickers.

Partnerships for a Cleaner City

Several proposals were developed. The waste pickers multipurpose center was designed and built to host activities such as literacy programs, solid waste recycling, and distribution of first-aid kits and gloves. An education program for waste pickers' children and small-business activities take place here as well. The center contains office space for dumpsite management. A market place was built for waste-trading activities.



The waste pickers' multipurpose center, built by the project, at the municipal dumpsite.

The project upgraded the 660 m access road from dirt to water-based macadam surfacing. Improvement included drainage on both sides of the road. Before improvements, dump trucks had difficulty getting there during the rainy season when the road was muddy and slippery. In the dry season, nearby residents had to endure the dust. For dumpsite operations, a 2.5-ton crane truck was purchased to compact waste for stacking and sale.



Access road to the municipal dumpsite, before and during construction.

Livelihood and Income Improvements

The project, in partnership with the Community Sanitation and Recycling Organization (CSARO) created a self-help business promotion fund to provide revolving funds for small-enterprise development. CSARO developed a manual on microcredit and savings, formed 65 self-help groups comprising 426 members, and then trained these self-help groups to manage loans and generate income. Microcredit loans of \$100–\$250 equivalent were given to 52 groups. By the end of the project, \$99,615 in microcredit loans had been disbursed to 65 groups. A repayment principal amount of \$66,422 with \$4,927 in interest was received. Repayment of the outstanding principal loan amount of \$33,578 with 59 groups was satisfactory. Loan repayments were used to establish a revolving fund to be maintained by the municipality under a separate account earmarked for jobs related to environmental improvements.

The waste pickers were a unique target group for microcredit activities. They are hard workers with the fortitude to endure suffering and danger. Many of them had already started small businesses such as waste trading and making products from recycled waste. Microfinancing institutions were not willing to offer them credit because they lacked collateral and were perceived as lending risks. The project calculated that microlending would not only improve waste pickers' livelihoods, it would also be profitable. Women entrepreneurs, it turned out, were especially businesslike and prudent.

Case Study: Microcredit Loan for Business Startup

Ty Sophal, 41, lives with his wife and four children in the squatter settlement at the Stung Mean Cheay dumpsite. He was formerly a motorbike-taxi driver and earned \$5 to \$7.50 per day. This was not enough to support his family. After receiving a microcredit loan, he started a business to buy and refurbish used shoes and make new ones. He thanks the project for the opportunity to improve his livelihood. After weeks of hard work, he now earns \$10 to \$15 a day. Over the course of 10 months, his net income rose to \$2,250.

Source: JFPR Project Impact Assessment Report.

Case Study: Greater Productivity through Microcredit Loans

Nop Sokha, a 45-year-old widow with four children who lives adjacent to the Stung Mean Cheay dumpsite, makes a living on recycled waste bought from waste pickers. Before receiving a loan, she rented a pushcart for \$0.50 a day, giving her a net daily income of \$1.25 to \$1.75. She frequently had to borrow from moneylenders at an interest of 5% a day. With a microcredit loan, she bought three pushcarts, increasing her net income to \$3.75–\$5 a day. Over 10 months, her accumulated income was \$975.

Source: JFPR Project Impact Assessment Report.

Case Study: Owning a Sewing Machine

Tith Cheng, a widow with seven family members, lives beside the Stung Mean Cheay dumpsite. Before she heard about the project, her net income was around \$5 a day. Using a rented sewing machine, she made pillows and cushions from recycled materials to sell at the Olympic market and in Battambang. After receiving a loan of \$250, she bought a sewing machine. Now she employs four helpers and her net income has gone up to \$15 a day.

Source: JFPR Project Impact Assessment Report.

Figure 2. Summary of Project Impacts



NGO = nongovernment organization

Lessons Learned

By working together, people understand that the problems of environmental sanitation are not confined to financial and technical problems, but are rooted in underlying problems of governance and accountability.



Way forward to a brighter future.

Project Design

The project design must be holistic. It must balance hardware such as infrastructure improvements, and software such as capacity building and public education. This balance is the cement that holds the community together. If a project gives beneficiaries a chance to earn income, even better. By working together, people understand that the problems of environmental sanitation are not confined to financial and technical problems, but are rooted in underlying problems of governance and accountability. Policy dialogue and information sharing among stakeholders is an integral part of a successful project design.

In the early stages of project design, participatory planning must be used to set out clear responsibilities of each key stakeholder. When communities understand their roles and responsibilities, they feel involved not only in design, cost, and selection of activities, but also in financing the project, mobilizing in-kind resources, and providing collective control mechanisms. Communities must participate in the baseline surveys, impact studies, and ongoing monitoring of the project's progress.

During the early stage of implementation, different NGOs were assigned separate activities for each subproject area. But having several NGOs in one

area caused confusion among community residents. When a single NGO was assigned to one subproject area, the results were better and created successful synergies.

Capacity of the NGOs and the agencies that directly undertake project activities should be thoroughly assessed before recruitment, if possible. Because the project coordination unit members were inexperienced, they had to learn by doing. After 1 year of experience, they could recognize the more reliable partners and know which contracts to extend. The project allowed municipal and sangkat officials to build their capacity through skills training, project management, awareness education, and public-private sector interactions.

Subproject site selection was crucial. Many communities and sites met the “needs” criteria, but gauging whether the communities were committed to providing the required matching resources was difficult, in part because of mistrust, unfamiliarity with resource sharing, and the reluctance to take risks. Consultative sessions and community outreach should aim to create a dialogue between local authorities and communities.

The project’s success prompted other communities to seek help using resource-sharing schemes. In the long run, these beneficial partnerships can lead to a sense of ownership and the propensity for communities to safeguard their investments.

Fee-Based Solid Waste Management

The project was designed as a learning-by-doing experience, with flexibility to devise and experiment with innovative ideas. In such a design, problems are inevitable and some visions are not realized. Fees did not recover all costs for collection and transport, but substantial gains were made in narrowing the gap so that more sangkats received this service. Within the system framework itself, communal transfer stations were too small and difficult to maintain. This led to problems when collection was delayed and complaints from neighboring residents.

The project envisioned constructing recycling banks—containers or shelters where residents deposit recyclable items such as plastics, paper, glass, and cans for temporary storage until pickup. It envisioned recycling centers—roofed shelters where recyclables are sorted and compacted for further shipment. Recycling banks and recycling centers would provide income for residents. Although the municipality agreed to provide the land, obtaining the land turned out to be difficult and impractical. The construction was cancelled.

The project was designed as a learning-by-doing experience, with flexibility to devise and experiment with innovative ideas.

Building trust starts with good intentions and communication and must continue throughout the project.

One foreseeable long-term risk in the community-based solid waste management system is a breakdown in revenue-sharing agreements. Although the sangkat councils and Cintri have agreed on the roles and responsibilities, terms of payment, and sharing of revenues, both parties have yet to develop mutual trust. Several community members complained that Cintri did not collect the trash according to the agreed-upon time and frequency, sometimes due to flooding and difficulties in access. Cintri, on the other hand, indicated that fee collection from sangkat was slow and not the agreed upon amount. Therefore, the Government needs to be proactive in its role as arbitrator and enforcer of contracts. The transparent and fair resolution of disputes is critical to sustain the envisioned solid waste management system.

Building Trust, Raising Awareness, and Developing Leadership

Building trust starts with good intentions and communication and must continue throughout the project. Trust is needed to develop networks and create accountability. The project demonstrated that given the right incentives, impoverished communities will contribute in cash or in kind to community development and participate in the design, implementation, and supervision of improvements. NGOs can bridge the communication gap and help negotiate with the private sector. Understanding stakeholders' interests and participating actively every step of the way are keys to building trust and effective partnerships.

The public awareness campaigns demonstrated that it takes continuous, repeated efforts to educate the public. The message must be easy to understand and should include a variety of media, volunteers, and outreach to gain the kind of community participation that effectively changes behavior. The sangkat leadership was instrumental in maintaining interest and enthusiasm, and in creating collective responsibility for not letting the improved conditions deteriorate.

Good leadership means being attentive to the aspirations of the people and must include good governance principles: accountability and collective decision making. The practice of good faith breaks down mutual suspicions and builds community.

Forging Partnerships

Establishing strong partnerships among key stakeholders was essential to the project's success. Strong municipal leadership is not enough. There must be support from khan and sangkat leaders, community beneficiaries, the private sector, and NGOs. In the beginning, for example, NGOs had their own ideas of how the project should be designed and implemented. So did the municipality. Communities were alienated from local authorities and external organizations. Cintri held on to their contracts with little leeway to attune to the interests of sangkat and their councils. Over time, the parties involved took steps toward collaboration, thus forging viable partnerships.

Private sector participation was instrumental in the community-based solid waste management system. Experience with Cintri demonstrates that given the right incentives and assurances, the private sector is willing to cooperate. But the Government must see that contracts are enforced and fair arbitration will ensue in the event of disputes. At the early stage of implementation, the municipality and Cintri were unwilling to cooperate. Consensus was reached only after much negotiation and clarification. The lessons learned were that all partners should (i) accept and respect each other's rights, (ii) be willing to listen and compromise instead of being defensive, (iii) construct and share common interests, and (iv) create a forum open to equal and friendly dialogue.

Subcontracting solid waste management to local authorities is commendable provided conditions and rights of existing waste collectors are protected. Conducting a baseline study before the project implementation should be carried out with a suitable timeframe because paying taxes, service charges, and fees are relatively new for the Cambodian people.

Strong government commitment to achieving efficiency and effectiveness is crucial in shaping government programs to reduce poverty. Lessons learned should be shared with sangkat and khan to create the kind of dialogue that is critical for improving the environmental condition of Phnom Penh as well as other places in Cambodia.

The community leaders and local governments require training to mobilize local resources, encourage community participation, and manage sustainable environment operations. The experience of partnering with NGOs showed that NGOs' flexibility and grassroots appeal varied. All the NGOs that worked with the project were capable of fulfilling their assigned tasks, but not all of them were willing to change their views on how tasks should be carried out. NGO leaders and staff must thoroughly understand the concept of participatory processes.

Establishing strong partnerships among key stakeholders was essential to the project's success.

Sustained poverty reduction requires a people-centered approach that targets the individual, the community, and society.

The community-based concept highlights active community participation from the inception and assumes communities will be well informed and fully understand the process, the project aims, and their own responsibilities. This concept encourages communities to take an active role in (i) identifying and planning projects; (ii) selecting design and technology; (iii) deciding on investments and contributing money; (iv) mobilizing local resources; and (v) implementing, managing, and maintaining operations.

Producing Synergies

Urban poverty, regardless of economic growth, will continue to be a formidable problem for years to come. Simultaneous efforts to improve physical infrastructure, mobilize and build community capacity, and generate income for the poor help break the cycle of poverty. It is unlikely that the project's objectives would have been achieved without the infrastructure improvements. But infrastructure improvements alone are not enough. The right mix of "hardware" and "software" produces a successful synergy.

Microcredit success was due to transparency, quick disbursement, and close monitoring as well as effective targeting of beneficiaries who had the potential to develop entrepreneurial skills. Recognizing the skills and dynamism within the informal sector shows that, given the right incentives, these people can reduce their own poverty. Promoting self-help groups and small-scale entrepreneurs, and providing them with access to capital are commendable. Household businesses should be assessed before loans are disbursed. Loan amounts should be weighed in light of the fact that most households need less than \$100 to invest in new or existing businesses. Minimizing loan amounts means making more money available. Handing loans over immediately after this assessment so that recipients can start or develop their business as soon as possible builds trust.

Sustained poverty reduction requires a people-centered approach that targets the individual, the community, and society. For individuals to thrive, communities should be geared toward collective action. Societies must enable frameworks and initiate policy change.

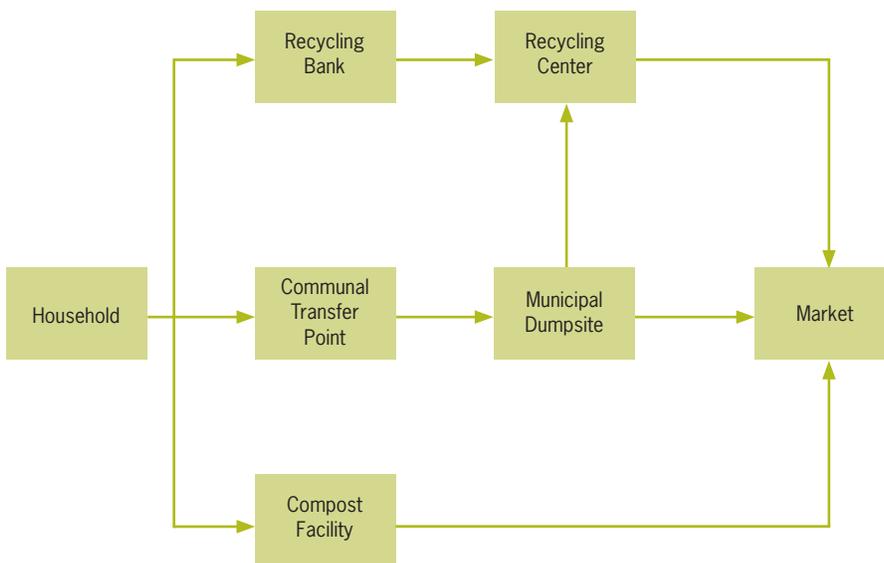
Possible Expansions and Replications

Because the project was so successful, other sangkats have expressed an interest in participating in similar projects. The municipality is soliciting donors to provide loans or grant assistance to establish community-based solid waste management systems in areas not covered by the project.

The municipality expanded the cost-sharing schemes to include construction of urban roads. The Government contributed and the Prime Minister contributed toward road funds. The community’s share went from 20% to 50%. Using this scheme, an additional 26 km of roads were upgraded in Cham Karmon khan. The municipality received requests for road upgrades from other sangkats and khans and is planning to expand this cost-sharing principle to other urban infrastructure areas such as water supply and drainage.

Waste recycling, segregation, and composting could be included in future projects. Given the proper information and incentives, individuals and households could segregate their waste (plastic, paper, glass, metal), and waste collectors could pick it up in pushcarts and take it to one of the many privately owned recycling banks in the city. These recyclables could then be taken at regular intervals to recycling centers to be sorted and compacted. Brittle plastic could be ground, bagged, and sold in the market or for export. Waste collectors could be trained to collect organic kitchen waste and transport it to a compost facility.

Figure 3. Expanded scheme for solid waste management



Epilogue: Toward a Better Future

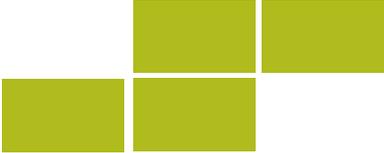
The project is successful yet much remains to be done. Although the project did alleviate the burdens of a number of households and communities, many people are still mired in poverty. Perhaps the most important lesson learned is that given the right intentions, the right mix of activities, and the ability to fully use resources, there is always hope for a better future. This hope was expressed at the project's completion:

“In essence, we are determined to...
...instill hope for the hopeless
...encourage poor people's involvement
...work together - and progress together
...realize a cleaner, healthier, and greener city”

Trac Thai Sieng, Vice Governor, Municipality of Phnom Penh



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With assistance from the Japan Fund for Poverty Reduction, the Income for the Poor through Community-Based Environmental Improvements Project in Phnom Penh, Cambodia, tackled flooding and poor drainage and solid waste disposal. Implemented from January 2003 to September 2005, the project improved people's health, incomes, and hygiene. Led by the dynamic Municipality of Phnom Penh, the project brought together nongovernment organizations, community leaders, and the private sector in a setting of cooperation and trust. Aside from establishing village-managed sustainable fee-based solid waste systems, the project also led to spin-off activities—small enterprises, waste recycling, and better governance. These will hopefully be the project's enduring legacies.

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Japan Fund for Poverty Reduction

The Japan Fund for Poverty Reduction, established by the Government of Japan and the Asian Development Bank (ADB) in 2000, supports innovative poverty reduction and social development activities. It has 107 projects in 21 countries in the Asia and Pacific region, with over 40 projects in the pipeline. Most of these projects aim to provide quality health, education, and nutrition services for the poor, and to improve agriculture and use of natural resources, which are closely linked with people's livelihood and incomes. The fund is administered by ADB's Office of Cofinancing Operations.



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