



WORKING PAPER

Just Managing the Solid Waste Management Partnership in Biratnagar, Nepal

Janelle Plummer and Richard Slater
January 2001

Working Paper 442 02



THE UNIVERSITY
OF BIRMINGHAM

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BUILDING MUNICIPAL CAPACITY
for PRIVATE SECTOR PARTICIPATION

DFID Knowledge and Research Project R7398
in collaboration with the UNDP PPPUE

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Building Municipal Capacity for Private Sector Participation

The Building Municipal Capacity research series is supported with Engineering Knowledge and Research (EngKARs) Programme Funding from the British Department for International Development (DFID). This Building Municipal Capacity Building for *Private Sector Participation* undertaken by GHK International, is being carried out in collaboration with the International Development Department (IDD), University of Birmingham and the UNDP Public-Private Partnerships for the Urban Environment (PPPUE) Programme.

The research aims to analyse and document municipal experiences of private sector involvement in the delivery of services and infrastructure and to formulate a strategic framework for municipal capacity building in private sector participation. The elements of this framework will be supported by in-depth illustrations of the lessons that have been learnt by municipalities in various parts of the world. The purpose of this case study series is therefore to compile a source of material that will inform and illustrate the capacity building framework.

A number of parameters describe the nature and scope of the work. First, the research and outputs are concerned with the participation of the (for profit) private sector in service delivery in cities overwhelmingly troubled with poverty and service constraints. The scope is also limited to those services that fall within the responsibility of municipalities. Combining these parameters has enabled us to focus the research on water and sanitation services and solid waste management.

Second, the research seeks to explore PSP in relation to urban management. Where possible, it intends to explore linkages between the private sector participation, municipal management and poverty reduction. A key concern of each study will be the lessons relevant for dissemination to smaller cities where financial and human resources are particularly constrained.

The case studies in this series are published as working papers and will be made available on the website www.ghkint.com. It is important that they are seen as part of a process and not an end in themselves. It is hoped that the transparency of this work-in-progress will produce greater awareness of the initiatives being undertaken, and promote peer learning amongst municipal officials. We hope it will also promote an openness in the vast arena of private sector participation research. Comments are very welcome.

Janelle Plummer
Team Leader and Series Editor

GHK International
November 2000

Definitions

<i>Private Sector Participation (PSP)</i>	'PSP' refers to the involvement of the private sector in some form, at some stage in the delivery of services. It is a general term that is used to cover a wide range of private sector involvement from the service contract, management contract, concession and BOT. It may also include informal sector participation.
<i>Public-Private Partnerships (PPP)</i>	'PPP' specifically refers to those forms of partnership in which government establishes an arrangement with the private sector and in which the private sector provides some form of investment. As such, the terminology PPP tends to exclude service and management contract arrangements, but includes leases and concessions.
<i>Privatisation</i>	This term is used to mean the transfer of ownership to the private sector. Divestiture is beyond the scope of the research.
<i>Service delivery or service provision</i>	The terminology 'service delivery' has generally replaced 'service provision' removing the implication that there is a provider and a recipient. This distinction is not always adhered to and so will not be overly stressed in this work.
<i>Pro-poor or poverty focused</i>	These terms have achieved different levels of favour at different times. Pro-poor implies that the overall aim is beneficial towards the poor, while poverty focused implies a greater degree of targeting.
<i>Consultation or participation</i>	These terms have very different meanings in participation literature, and are not used interchangeably. Consultation means that a stakeholder was contacted and their views sought. Participation is generally used to refer to a two-way flow of information and implies a greater degree of influence over the decision-making process.
<i>Municipal</i>	The term municipal refers to the local level of government. It is the 'municipal' level of government that is frequently, and increasingly, responsible for urban services and infrastructure. It is also the implementation arm of government, being responsible for executing policy. Technically this work also includes local level (line) agencies responsible for service delivery.
<i>Capacity Building</i>	The term 'capacity building' draws on a UNDP definition which includes a broader understanding of capacity which includes organisational development, human resource development and regulatory framework. The terminology municipal capacity building refers specifically to organisational and HRD issues and those regulatory issues are within the scope of municipal government.

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Acronyms

ADB	Asian Development Bank
AES	Americorp Environmental Services
BMC	Biratnagar Sub Municipal Corporation
CBO	Community Based Organisation
DFID	Department for International Development
EIA	Environmental Impact Assessment
FINIDA	Finnish International Development Agency
GNP	Gross National Product
HH(s)	household(s)
HMG	His Majesty's Government
IRs.	Indian Rupees
KMC	Kathmandu Metropolitan City
MSP	Municipal Service Partnership
MSWM	Municipal Solid Waste Management
NGO	Non-Governmental Organisation
NRs.	Nepali Rupees
NWSC	National Water Supply Corporation
PPP	public-private partnership
PSP	private sector participation
RUPP	Rural Urban Partnership Programme
SW	solid waste
SWM	Solid Waste Management
UDLE	Urban Development through Local Efforts
UN	United Nations
UNCHS	United Nations Centre for Human Settlements
UNDP	United Nations Development Programme

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Janelle Plummer
GHK International

jplummer@mweb.co.za
jplummer@ghkint.com

Richard Slater
IDD, University of Birmingham

r.p.slater@bham.ac.uk

Partnership Profile

The case of Biratnagar municipal solid waste management provides a multiplicity of lessons on the opportunities and constraints in negotiating and operating public private partnerships at the municipal level. The contract for municipal solid waste management in the city was initiated at the instigation of a private company soliciting for the work. No prior attempts had been made to study the problems and needs with respect to solid waste in the city. Without the necessary expertise and without consultancy support, the Biratnagar Sub-Municipal Corporation entered into a 10 year contractual agreement with an US-based company, Americorp Environmental Services Inc. in 1997. Municipal decision-makers were led to believe a partnership with the private sector would not only improve the delivery of services within the city but would ultimately result in profits for the municipality itself. No institutional or financial appraisals or willingness-to-pay studies were carried out. There was no indication of tendering, competition or other mechanisms being introduced which would ensure transparency and accountability.

The attractiveness of the proposal, the charisma of the company representative and the written support of the United States Embassy created a comfortable situation for the municipality to embark upon such a partnership. As a result little effort was made to confirm the viability of the company through financial checks and assessments of previous work. In the final event, it was the local banks through which the loans were to be obtained that finally exposed the financial incapacity of the company and refused the financing necessary for the project to move forward. The representative and instigator of Americorp fled the country.

The disappearance of the private operator from Biratnagar left the municipality politically rather than financially exposed. The financial support and collaboration which the international operator had developed with a local engineering consultancy, as well as the number of high level officials and politicians who had been personally misled resulted in widespread embarrassment and a desire on the part of a few local businessmen to establish a viable operation based on the original proposal. A local engineering consultant SILT which had attempted to establish good relations with the original contractor later assumed responsibility for Americorp, a decision which has subsequently caused severe financial difficulties for the company as they assumed a large and unexpected debt burden associated with Americorp.

Since the municipality was keen to sustain the partnership, in spite of the problems associated with the original representative of Americorp, the new owners of BMC-Americorp Environmental Services. In comparison with contracts proposed by the World Bank and other organisations supporting good practice in SWM, the current arrangement strongly favours the municipality in a situation where:

- the private contractor assumes all the risk;
- the municipality is eligible for 10% of the profit, but no loss or investment;
- fee collection is the responsibility of the private contractor, the municipality has no liability for non-payment;
- the contractor is responsible for developing its own customer base for door-to-door collection, the municipality plays some role in facilitating this process;
- the private contractor undertakes to develop a landfill site and recycling facilities and to make this commercially viable without significant contribution from the municipality.

The contractual arrangement under which BMC-Americorp Environmental Services (Americorp) currently undertakes approximately 35% of the coverage of solid waste services (and 50-60% of the quantity) in Biratnagar is a complex agreement with Biratnagar Sub-Municipal Corporation. It comprises some provisions from the spurious franchise/concession, informal agreements covering other issues and an additional service contract. Despite the rather ad hoc nature of this agreement, the original contract is still the legal grounds on which both parties continue the partnership. With this very unfavourable contract at the basis of the agreement, the private operator has managed and implemented (partial) solid waste management services in Biratnagar. The services include storage, collection, processing and will include recycling and reuse and final disposal of household waste. This is managed in a franchise arrangement whereby the operator is responsible for the billing and collection of revenue for services, while the municipality is obliged to provide NRs. 2.5 million (\$37,000) of subsidy payments to the operator on an annual basis (for the first two years only). To date the operator has been paid only NRs. 1.5 million (\$20,000), ostensibly because collection services only cover 25% of the town. This alone threatens the viability of the partnership.

In order to improve the coverage for the door-to-door waste collection service, the contractor has taken on a separate contract for street sweeping. Although Americorp has agreed to undertake this work for less than the cost of the service to the municipality, the benefits of the contract to Americorp have been substantial. The marked improvements to the cleanliness and collection from the streets has led to increased awareness amongst the public of solid waste issues, increased acceptance of a private sector role in solid waste services, greater willingness to pay for household collection and an increase in the number of households participating in the door to door collection scheme.

A number of issues however point towards the unsustainable nature of the current arrangement. In particular, the current financial arrangements are not viable. The main problems stem from:

- precarious financial position of the operation resulting from the original contract provisions
- inadequate understanding of the economics of waste management in Biratnagar
- lack of financial and technical data on waste management operations
- poor costing of services and low levels of willingness to pay
- lack of external capital support for the venture (particularly given the medium term project gestation period)
- problems with internal financing arising from the acquisition of Americorp and its debts
- uncertainties around provision of stipulated grants from the municipality
- inadequate sanctions applying to wilful defaulters involved in the scheme
- the responsibility for the collection of tariff being placed with the operator.

The arrangement does not aim to target the poor and potential impacts on low-income communities are both positive and negative. On the one hand, the operator is keen and pro-active and has initiated small-scale attempts to work with poor communities directly: briquette-making, communal collection proposals, hygiene promotion. On the other hand, the operator is employing unskilled labour at low rates with less security than the public sector. As these workers are a part of a scheduled caste mostly employed in conservancy, this employment practice benefits those obtaining the service (mostly middle class) at the detriment of these (low-income) sweepers and collectors.

In order to move forward into an effective and sustainable pro-poor partnership a number of strategic and practical changes are envisaged. First, the municipality should investigate, through comprehensive *studies*, the key financial and institutional issues; and develop institutional, commercial and financial *options* for the integrated solid waste management in the city. There is currently no clear idea of the real costs and likely returns, particularly with regards to a more integrated approach to MSWM. Decisions on involving the private sector can then be based on fact and not assumption.

If this process demonstrates the potential of private sector participation then secondly, there is a need to *build capacity* in both the private and public sectors. This capacity needs to ensure that skills and attitudes are developed and management structures and systems are enhanced to deliver pro-poor services. Third, mechanisms that *involve the poor* directly in the collection of solid waste at the tole (lane) level, should be explored. While improving environmental conditions, opportunities should be developed which draw on and contribute to the capacity of community level institutions and enable a more significant convergence with the RUPP poverty programme. Fourth, pay and work conditions should be established that are at least equivalent to that provided in the public sector. Fifth, with regards to recycling and reuse, the MWSM system needs to *broaden the scope* to include scrap and other valuable waste currently leaving the municipality, and consider the options for working in partnership with nearby municipalities to create economies of scale in disposal and recycling.

Partnership Data

Sector	Municipal Solid Waste Management
Level of infrastructure	Partial services at primary, secondary and tertiary levels
Target group	Includes residents, commerce and industry population 170,000 currently focused on activities in core areas (50-60%)
PPP objective	Delegation of solid waste services for profit-making objectives Efficiency in service delivery Drawing on private sector skills and technologies for integrated solid waste management.
Partnership arrangement	Mixed: Service Contract /Franchise /Concession
Size	Annual expenditure NRs. 4.8 million, \$70,000 US (Direct operational cost of last FY 1999/2000, excluding depreciation, loan Interest, GM salary etc)
Duration	10 years
Primary stakeholders	Biratnagar Sub Metropolitan Corporation (BMC) BMC-Americorp Environmental Services Pty Ltd (Americorp) SILT Environmental Services Pty Ltd. (SILT)
Ownership	Private 90% / Public 10%
Risk	Private
Key characteristics	Integrated approach to municipal solid waste management Contract established initially with fraudulent contractor and taken over by local engineering contractor who has re-established confidence in the initiative. Complex contractual arrangement favourable to the municipality and unsustainable for ongoing private sector involvement. (Dispersed) door-to-door collection, (not yet fully successful) separation at source; unprofitable, small scale/pilot initiatives in recycling and waste products. Proposal to replace current practice of dumping with large scale composting and recycling..
Issues concerning the poor	Some initiatives with poor communities in their infancy. Opportunity for private-community initiatives to converge with other poverty reduction programmes (RUPP). Low wages and poor conditions for conservancy workers from low-income communities perpetuated.
Lessons learnt	Caution should be taken in establishing contracts, preparation is the key to an effective contract. Contracts overly favourable to the municipality are unviable and unsustainable. Franchising collection not suitable as it is too difficult for private sector to collect fees. A long gestation period is required to integrate private sector participation into municipal approaches, external support is required if costs cannot be covered by municipality.
Capacity concerns/ capacity building	Capacity improvements required in both private sector and municipality – in understanding limitations of SWM PPP and in recognising skill gaps. In SWM operators may come from the local private sector and capacity building may be needed in the private sector as well.

1 Introduction

Over recent years there has been a slow but gradual progression in the development of public private partnerships in Nepal. While the overall legal and regulatory environment needs development and clarification, there are no obstacles in the 1991 Constitution or the 9th Plan document that hinder the establishment and operation of such partnerships, policy-makers appear to be increasing their support, and various donors, interested in the promotion of private sector participation, have seen the potential of working in the context of Nepal.

In relation to service delivery, both the water supply and sanitation and solid waste sectors were identified in the Industrial Enterprises Act of 1992 for greater private sector involvement. Nevertheless progress has been cautious and to date much of the activity, mostly supported by international agencies, has been concerned with water supply and sanitation, a sector currently outside the scope of municipal responsibility. A limited number of private sector participation (PSP) initiatives in the solid waste sector have been developed locally at the instigation of private operators and local politicians and officials. The most significant private operation in the solid waste sector is the Biratnagar Sub-Municipal Corporation public-private partnership for municipal solid waste management.

The Biratnagar case study has been selected for this Building Municipal Capacity research for a number of reasons. First, it represents one of the few examples in South Asia where a municipality has entered into, and developed experience in, a complex partnership arrangement with the private sector in solid waste management. Second, the ambitious nature of this franchise arrangement stands in contrast to the service contracts developed elsewhere; and third the arrangement has been in operation since 1998 and a process of lesson-learning, revision and reorientation is underway. The Biratnagar case thus provides an opportunity to analyse the opportunities and drawbacks of partnership arrangements, the potential scope of partnerships in the solid waste sector and the lessons arising from contract implementation.

However, the Biratnagar case is not typical in the sense that the original contract discussions and the subsequent arrangements were fundamentally affected and confused by manipulative and fraudulent behaviour on the part of the original operator. While this created an unusual starting point, the subsequent and committed efforts of a local entrepreneurial engineer and the municipality to restore the situation and develop a genuine partnership for municipal solid waste management, are informative for all municipalities. In this respect, the case reveals the dangers of municipalities entering into partnerships without adequate preparation or sufficient knowledge of the technical specifications and contract implications of what they are signing up to. It highlights the problems experienced where international operators promise inappropriate technologies and illustrates the problems encountered where emerging local operators are relatively unfamiliar with both municipal solid waste management and with the nature of a public-private partnership (PPP). Ultimately it presents a mixed collection of achievements and problems.

This study begins by examining the policy and legislative environment governing public private partnerships, the various capacity building initiatives at the national level and the experience of private sector participation in basic services in Nepal. It then goes on to examine the specific case of the solid waste management partnership in the municipality of Biratnagar. This examination focuses on the way the partnership was established, the current contractual arrangement and the nature and scope of the partnership. It then explores in greater depth some of the important issues arising

from the arrangement and examines the elements that have been developed to target poor communities. Like other case studies in this series, it then focuses on the primary capacity constraints and the capacity building requirements of the municipality. Finally the case study identifies the key lessons to be learnt by other municipalities and outlines some of the key dimensions of a more effective partnership in Biratnagar.

2 The context of private sector participation in Nepal

Policy towards private sector participation

Since parliamentary democracy was established in Nepal in 1990, the development of policy that fosters the involvement of the private sector has been adopted as one avenue towards sustainable economic growth. This policy was facilitated by the liberalisation of the foreign investment regime, formalised under the 1996 amendment to the *Foreign Investment and Technology Act of 1992*. In order to speed up the process of private sector participation to meet development objectives, the Ministry of Finance established a Privatisation Cell working under the guidance of a technical adviser from the UK-based Adam Smith Institute. This cell promoted an English model of privatisation and as a result, most initiatives concentrated on full privatisation of national entities i.e. on the lease or sale of public undertakings at the national level rather than partnership arrangements at the local level.

More recently, the Government of Nepal has confirmed the commitment to the promotion of private sector involvement in the development of the country, through a number of policy statements. The most recent was the statement made by the Minister of Finance in the 2000/2001 Budget Speech in June 2000 in which he stated that the “...privatisation process will be carried out effectively to reduce the pressure on public expenditure and to direct resources to the needy areas. Government’s involvement in commercial activities will be eliminated gradually. Investment, productivity and economic growth of the country will be given top priority to the overall and sectoral improvements that are necessary for the development of the private sector...private sector involvement will be enhanced for infrastructure development...”¹

Despite this, actions have not necessarily always supported the policy rhetoric, and there has been some ambiguity over commitment to the development of PPPs. Most action has been taken in relation to specific sectors including health, education and urban transportation. Policy-making in the water and sanitation sector is discussed in relation to the Kathmandu valley initiatives later in this chapter. The High Level Committee for Private Sector Participation has been a primary vehicle for the development of this arrangement.

The Legislative Framework

The legal and regulatory environment in Nepal for municipal service delivery is tolerant of private sector participation although to date no steps have been taken to promulgate specific acts or amendments that would create an enabling environment for such an initiative. Neither the 1991 Constitution nor the 9th Plan document contain impediments to private sector participation in basic services; legislation providing for decentralisation provides for local authorities with the power and

¹ Paras 71 and 72 of the Budget Speech 2000/2001 by the Right Honourable Minister of Finance, Mr Mahesh Acharya.

authority to act and the provisions of other legislation do not specifically constrain private sector involvement in the functions prescribed to local government.

The key acts currently determining the legal framework for municipal partnerships in service delivery and some of the primary limitations of this framework are discussed below.

- *Local Self Governance Act of 1999*

The primary act of relevance to PSP in solid waste management and other municipal services is the Local Self-Governance Act of 1999 (accompanied by the Local Self-Governance Rules and Local Government Financial Rules 2000). The Act is intended to develop municipalities as self-governing autonomous urban local bodies enabling them to play an effective role in the context of overall urban development in general and the improvement of environmental conditions for urban dwellers.² While there remain regulatory gaps to be filled in order to fully implement the intent, it provides a statutory framework on local governance and decentralization with considerable scope to improve its effectiveness.³ Under the Local Self-Governance Act, the development of effective local governance systems is provided for through the devolution of responsibilities, authority and resources required for effective local governance; the installation of institutional mechanisms and working procedures; the devolution of authority for resource mobilisation; the encouragement of transparency and accountability; and the encouragement of civil society to participate in the activities of providing basic services.⁴

Not only does the Act specify that municipalities must ensure the delivery of urban services the Local Self Governance Act 1999 has clearly set out the importance of "encouraging the private sector to participate in local self-governance in the task of providing basic services for sustainable development" as one of the six basic principles and policies of local self-governance. Similarly, Section 96 of Part 3⁵ of the Act provides for local government "to encourage or cause to be encouraged to carry out cooperative, industrial and commercial activities generating income to the municipality with the investment of private sector as well". Section 96⁶ highlights the role of consumer groups: "[C]onsumer groups and other non-government organizations shall have to be encouraged for the development and construction works to be done in the municipality area and such works shall have to be done through such groups or organization as far as possible". Furthermore, Section 121 says "the municipality shall have to encourage the non-government organizations [the definition of which includes the private sector] for the acts of identification, formulation, operation, evaluation, repair and maintenance of the town development programmes within the area of each municipality".⁷

The procurement and construction arrangements under the Local Self-Governance Regulations empower municipalities to procure goods but do not say anything on the procurement of services, development of infrastructure and the operation and management of them by private sector.⁸ There are no restrictions on municipalities with regard to tariff rates or procedures for tariff setting although tariffs must be adopted by a special resolution of the Municipal Board.⁹

² Nevertheless, the act has also reversed some important avenues of revenue generation, in particular the power to issue municipal bonds has been removed. The municipality in Kathmandu was in the preparing to issue municipal bonds to finance the improvement of infrastructure when the act was promulgated and disempowered them of this right.

³ ADB 2000b

⁴ ADB 2000b p23; Heavy emphasis is given to the involvement of user groups and non-government organisations (UNDP 2000) p18.

⁵ Part 3, Chapter 4, Section 96, sub-section 1, clause j, sub-clause 24

⁶ Part 3 Chapter 4, Section 96, sub-section 3

⁷ Correspondence from Ramesh Munankami RUPP 2000

⁸ UNDP 2000 p18

⁹ ADB 2000a

- *Foreign Investment and Technology Act of 1992*

The Foreign Investment and Technology Act of 1992 provides incentive for international operators, permitting foreign investors to repatriate the full amount they receive from their profits or dividends, monies received from the sale of profits, payment of principal and interest on any foreign loans and amounts invested in transferring foreign technology.

- *Industrial Enterprises Act of 1992*

The Industrial Enterprises Act of 1992 identifies priority areas for private investment. This includes, *inter alia*, solid waste collection and disposal. Fiscal incentives are provided to exempt enterprises from import taxes on solid waste and waste processing equipment.

- *Labour Act of 1991, Trade Unions Act of 1992 and the Labour Regulations of 1993*

The Labour Act of 1991 is applicable to private operators because it sets out mandatory requirements for the terms and conditions for staff recruitment and employment. The main areas of concern include provisions that state any change in ownership *shall not affect the terms and conditions of service of workers and the procedures for termination of employment*. Alongside this there are minimum wage provisions, termination procedures and requirements on health and safety and welfare, provident and medical fund contributions. The legislative review for the water and sanitation sector drew attention to the potential problems with this act. These provisions could offer the opportunity for a considerable amount of disruptions of the operators business. There is also provision for the Department of Labour to impose a fine and for unauthorised acts to be quashed by the Government. There is a complicated system of tribunals ...there is power apparently to examine documents, deal with disputes and impose welfare provisions.¹⁰

The Labour Regulations of 1993 further stipulates the working hours for minors (14-16 years of age) and women, procedures for maintaining an employees register, employee leave, and health and welfare arrangements. The Trade Union Act of 1992 allows for at least 10 or 25% of workers of an enterprise to form an establishment level trade union.

- *Contract Act of 1999*

The Contract Act of 1999 specifies the procurement process that must be followed for pre-qualification, tender and selection of contractors in the public sector. As an independent legal entity, the municipality may execute contracts for basic services exclusive of these provisions.¹¹ The existing procurement legislation, however, does not adequately address the specific requirements of PSP and no clear strategy has been formulated for engaging NGO/CBOs in PSP activity.

- *Privatisation Act of 1994*

While privatisation is defined to include the full or partial participation of the private sector the Privatisation Act of 1994 would appear to have been applied only to those 'establishments' classified by the Government and approved by a Privatisation Board (also provided for in the Act). It can be argued that this Act (which has be framed in Nepali) deals only with divestiture of state enterprises and not PSP/PPP

¹⁰ Binnie Thames Water 1998 p14

¹¹ ADB 2000a

transactions.¹² This is supported in practice in recent experience in the water sector where the PSPC has not been established under the Privatisation Act and the water and sanitation agencies are not classified as establishments under the Act.

However a number of provisions in the Act may prove to be a concern to an operator if the current mode of enforcement changed. Specifically, those concerning evaluation of proposals which include the requirements for *operating the establishment in the same way as before* and *retaining incumbent workers and employees* which could restrict potential management improvements if enforced; and the unclear provisions pertaining to arbitration. More importantly, the Act technically provides for privatisation or PSP activities, and the Privatisation Board has significant powers. There is a need for legislation to be introduced which removes the ambiguity and lack of clarity on the application of this Act as it currently provides as a course of action for challenges to agreed PSP initiatives.¹³

- *Environmental Conservation Act of 1999*

The primary legislation concerned with the environment is the Environmental Conservation Act of 1997. This provides for preliminary environmental tests and environmental impact assessments to be carried out where a proposal for changing land use is likely to lead to a change in the existing environmental conditions. It applies, for instance, to any proposals for landfill and recycling of solid waste, and work requires the approval of the Ministry of the Population and Environment.

- *Other relevant acts*

- Insolvency provisions in the *Company Act of 1996* encourages liquidation rather than reorganisation and creates a risk of essential services being suspended or disrupted.¹⁴
- The *Contract Act of 1999* does not specifically mention public-private contractual arrangements, but more generally provides for contractual arrangements between two parties. The lack of specific provisions means that most private sector participation transactions (such as procurement and contracting) are governed by the Finance Act and the Contract Act.
- The *Land Acquisition Act of 1977* provides the power for central government to acquire land. However, the Local Self-Governance Act prohibits the municipality to sell property without the permission of the government.
- The *Solid Waste Management and Resource Mobilisation Act* is the only specific act pertaining to solid waste management but applies to the Kathmandu valley area only.

The review carried out for the development of a PPP arrangement for water and sanitation services in the Kathmandu valley provides detailed description of a number of these acts. In addition it highlights that one of the peculiar features of Nepali law is not the lack of statutory powers and structures, but the failure to implement and enforce these provisions.¹⁵ Accordingly, a more precise legislative framework for PSP at the municipal level must be accompanied by a more structured approach to enforcement if the legislative framework is to become a meaningful context for private sector activity.

¹² UNDP 2000 p18

¹³ Binnie Thames Water 1998 p10

¹⁴ ADB 2000a

¹⁵ Binnie Thames Water 1998 p1

Capacity development for private sector participation

In this environment, the initiative for a municipality to embark upon private sector participation depends largely on the existing knowledge, the commitment and enthusiasm of the political decision-makers in each individual municipality. To date there has been no specific or formalised private sector participation capacity building programme initiated at the national level to promote general knowledge on PSP or on the potential of municipal service partnerships; and there are no guidelines on the approach to partnerships and the way in which partnership arrangements could be formulated by municipalities. Most of the capacity building in private sector participation undertaken in Nepal has been initiated within specific sectors or organisations to develop the skills, knowledge and enabling environment to promote private sector participation in that sector. To date, the sectors progressing toward private sector participation in Nepal are hydropower, telecommunications and water supply and sanitation

However, a number of donor-funded initiatives have stimulated understanding of infrastructure-related private sector participation. These include:

- *Nepal-German Co-operation Project*

The Nepal-German co-operation project *Urban Development through Local Efforts* (UDLE) aims to provide some capacity building through its municipal support programme now being undertaken in 10 municipalities. It includes organisational development, financial management, urban planning, sanitation and urban hygiene, conservation and development as well as some financial assistance (through the KfW Town Development Fund) for municipal reform activities. Capacity building in private sector participation is implicitly included in this programme although in the future this may become a more targeted area of work.

- *ADB funded technical assistance to the KMC*

Activities under the ADB funded technical assistance project *Institutional Strengthening of Kathmandu Metropolitan City* specifically include private sector participation capacity building (and also include solid waste management operations). The main objectives of the capacity building workshops in relation to private sector participation were:

- to improve municipal stakeholders awareness of the opportunities of private sector participation and the benefits of PSP in urban service provision; and
- to identify potential PSP projects and to help municipalities formulate action plans to initiate PSP activity.

This capacity building was targeted at municipal officials (elected and non elected), members of local chambers of commerce, entrepreneurs, NGOs, financial sector and government officials. The content focused on benefits of private sector participation, international best practice, market regulation, economic scale of activity, social considerations, types of PSP and transactions, risk management and responsibility, operational guidelines and legal constraints.

In addition to these training activities, a draft policy framework on private sector participation has been produced under the ADB-funded TA to Kathmandu Metropolitan City. This framework will be supplemented by promotional and guidance materials that will be useful to all municipalities concerning the drafting of policies for municipal planning and procurement under PSP with standard operating procedures. Although these have yet to be formalised, the planning and procurement legislation and regulation will deal with those issues that KMC believes must be mandated uniformly for all PSP procurement. It will take the form of non-binding

guidelines and provide best practice information for municipalities to consider. Further guidelines are being developed for KMC on simplifying PSP arrangements and institutional arrangements for the Municipal Board decision-making with regard to PSP as well as support mechanisms for contract compliance and regulation.

- *UNDP Rural-Urban Partnership Programme*¹⁶

Rural-Urban Partnership Programme (RUPP), a joint effort of HMG of Nepal, UNDP and UNCHS, is being implemented in twelve urban market centres and twenty-eight rural market centres in Nepal. The Programme aims to enhance development of both the rural and urban economies by enhancing the linkages of rural urban production and consumption systems. Strengthening rural and urban linkages requires institutions other than just the government and elected authorities; and ownership and participation of both the rural and urban populace, through a local governance system which is responsive to, and capitalises on, rural-urban economic linkages. One of the keys of the RUPP is the mobilisation of private sector organisations to produce goods and services that foster transaction between rural and urban centres, and the concept of the public private partnership (PPP) is thus an important programme component. The main aspect of PPP in RUPP is the mobilisation of private resources in the provision of urban services, the optimum use of infrastructure undertakings established under public ownership and in undertaking different community enterprises.

RUPP strategy aims to create the enabling environment necessary to implement effective and sustainable partnerships through consultations and local capacity building. Emphasis has been given to the environment and women's empowerment to minimise negative environmental and social impacts. Through PPP processes, RUPP intends to motivate civil society and the private sector to provide better services and to improve public awareness about urban environment service and management. This involves improved efficiency in participatory planning, implementation, monitoring and evaluation, but also the promotion of ownership, cost sharing and cost recovery, and improved skills and technologies to enhance efficiency.

Support for bringing about change specifically involves the dissemination of knowledge on PPP, the initiation and promotion of PPP, co-ordinating and facilitating the public and private sectors in discussions on PPPs to accelerate the implementation of PPPs and the provision of technical support for this implementation process in facilities and services. Several PPP cases have been identified and some are already in progress.

- *UNDP Public Private Partnerships for the Urban Environment*

The UNDP Public Partnerships for the Urban Environment (PPPUE) initiative is being launched in Nepal and a project framework has been developed with national level partners. The development objective of PPPUE in Nepal is to increase the access of the urban poor to basic services, and therewith, to contribute to the creation of a healthy environment and the improvement of living conditions in the urban and peri-urban areas of Nepal. The intention is to achieve this by the promotion of public-private partnerships for the sustainable provision of urban services in up to 15 municipal areas. The immediate objectives and activities seek to achieve at least one model PPP project in each municipal area through programmes for: policy and legal reform, human resource development, institutional strengthening, expert advisory services, preparation of manuals and the introduction of standard procedures.¹⁷

¹⁶ This information has been provided by Dr Ramesh Munankami of RUPP (January 2001). We are very grateful for this input.

¹⁷ UNDP 2000 (PPPUE Project Document Summary description)

Experience of private sector participation in basic services in Nepal

Kathmandu Metropolitan City

The most significant private sector participation activity in Nepal has developed in Kathmandu.¹⁸ The most recent efforts have focused on the development of a policy framework for private sector participation in KMC functions. Approved by the Municipal Board, this outlines, in explicit terms, the intention to 'attract the private sector by creating a conducive and trustful environment for their investments by ensuring maximum facilities that can be given by KMC'. The policy identifies a number of opportunities for PSP in the city including the expansion of existing urban services, the construction and management of basic facilities and the development of targeted projects.

With the support of the ADB programme described above, the KMC has drawn in specialist skills to assist in policy development. It is contemplating a range of different forms of PSP and a number of priority areas (identified in Figure 2.1). The city has also established institutional arrangements (a high level committee, a task force and a secretariat) to facilitate the PSP projects. The thoroughness of this approach stands in contrast to efforts at the national level.

Figure 2.1
Private Sector Involvement in Urban Services in Kathmandu

Service	O & M Contracts	Lease	Concession/BOT/DBO	Privatisation/BOO
Service Contract Sub-sectors			Investment Sub-sectors	
Urban Services				
Solid Waste	Street Sweeping Collection/Transfer Billing/Collection/ Customer Service	Equipment & Vehicles	Disposal Facilities Recycling	Disposal Facilities Recycling
Single-Function Commercial Sector				
Bus Terminals	Operational Mgmt of facilities and business.	Vehicles Facilities	Commercial Development of Terminals	Commercial Development of Terminals
Abattoirs	Operation & Management	Machinery slaughtering	Construction & Management	Development of Abattoirs
Parking	On Street Parking		Parking Arcade	Parking Arcade
Markets	Management of Markets		Market Arcade	Market Arcade
Integrated Areas Development Sector				
Industrial Estate			Estate development	Estate development
Commercial Centre	O& M of facilities		Centre development	Centre development

(extract from the KMC Policy Statement on PSP, 2000)

Kathmandu Valley water and sanitation services

While urban water supply is not a mandated municipal function and falls under the authority of the National Water Supply Corporation (NWSC), the initiatives in the water sector in Kathmandu valley provide an instructive case of private sector participation in a core public utility. In 1997 a decision was taken to consider options for private sector participation in the activity of the NWSC following a relatively unsuccessful attempt at strengthen its management and operations through World Bank credit and technical assistance. A four member high level committee has been established to consider the modalities for PSP in the sector focusing initially on the 5 municipalities in the Kathmandu valley. This committee is currently in the process of

¹⁸ While Kathmandu Metropolitan City is considered to be quite aggressive on private sector participation, it has encountered resistance to the development of PSP initiatives.

formulating a 10 year lease (affermage) contract arrangement. The intention was for the arrangement to be based on the volumetric sale of water and to instigate incremental tariff increases over a 6 year period in order to achieve full cost recovery. The partnership proposal included World Bank credit for the rehabilitation of works and subsidies to cover the period of tariff revision.¹⁹

In order to facilitate and support this process international consultants were appointed to prepare detailed financial analysis of the scheme, to review the legal and contractual provisions, develop specifications for the bidding process and draft terms of reference for public relations. A number of supporting studies were also to be commissioned on aspects such as legislative amendments, institutional and regulatory framework and the implications on the arrangement on the poor.²⁰

Apart from these initiatives focused on the Kathmandu area, experience of private sector partnerships in other urban areas of Nepal have been more limited in size and scope. The following section describes the context of Biratnagar and the experience of the solid waste management partnership undertaken there over the past 4 years. In contrast to Kathmandu, Biratnagar has experience of implementing a partnership arrangement without the experience of policy-making.

3 The Context of Biratnagar

Biratnagar is the second largest city in Nepal, located in the east of the country approximately 500 km from Kathmandu. The city has a population of 170,000 (53.3% male and 46.6% female) with an urban growth rate of 3.3%. As a major industrial and administrative centre, the higher male population evident in Biratnagar is explained by the migration of male workers in search of employment. Over the last decades, Biratnagar has become typical of many South Asian cities experiencing serious decline in the state of the city and its resource base. As a result of natural population growth, rural-urban migration, and chronic deficiencies in resources, infrastructure is deteriorating and the municipality has neither the human nor the financial capacity to make significant and sustainable improvements.

The political body of the Biratnagar Sub Municipal Corporation comprises 112 elected representatives across 22 wards. 5 members are elected per ward including a ward commissioner and 20 nominated councillors.²¹ Executive power rests with the Mayor, Deputy Mayor and Municipal Board²². Currently, the Council and Board are a coalition of members representing all 5 national parties.

The executive arm of the municipality comprises 400 staff organised into 4 main divisions: Administration; Finance; Public Health and Social Welfare; Planning and Engineering as well as a Public Relations and Monitoring Cell. The Solid Waste Management Sub-Section falls within the Planning and Engineering Division and is the responsibility of the municipal engineer in charge of waste.

¹⁹ The subsidy is intended to cover the difference between the lease contract fee and the tariff over the period of tariff revision. Interview with Rattan Kumar Sindh, Coordinator, PSP High Level Committee (HMG-N/MHPP)

²⁰ The future of the partnership arrangement is currently unknown. The financial and technical assistance being provided by the World Bank is currently under threat due to the government's unyielding negotiations with the ADB over capital financing to address bulk water supply. The World Bank is currently questioning the need for such massive capital investment if the efficiency of the existing system is improved.

²¹ This must include members from minority groups and 40% of the elected representatives should be women.

²² The Board includes all 22 Ward Commissioners plus 2 nominated members.

The municipality is responsible for a range of municipal services, including solid waste management, but not including water and sanitation services which currently remains under the control of NWSC. Solid waste management services prior to 1997, did not include any household collection. Common practice saw the dumping of unusable rubbish on the street or vacant plots. Street sweeping was carried out by a pool of permanent and temporary municipal workers (working to varying degrees of efficiency) and waste collected was then dumped at a municipal dump site by the river.

Poverty in Biratnagar

The Biratnagar Sub Municipal Corporation estimates that 40% of the population (or 80,000 people) are currently living at or below the poverty line. Approximately 15% of the total population (or just under half the poor) are thought to live in informal, illegal settlements. There is some controversy about in-migration in Biratnagar, it is a very political issue and poor households are categorised as either:

- (a) illegal immigrants from India;
- (b) migrants from rural areas, with a home elsewhere; or
- (c) indigenous people from the Biratnagar area - "son of the soil".

The municipality focuses poverty alleviation efforts towards the latter group, as this group is seen as those being in need and 'eligible' for their direct support.

Figure 3.1
Disaggregating poverty in Biratnagar

The disaggregated analysis of poverty in Biratnagar indicates that the poorest households are generally from specific cultural groups (tribal and lower castes), many are destitute and homeless in insecure accommodation. These households live in homogeneous settlements, in pockets scattered throughout city or in other slum areas, mostly encroaching government land with no basic services whatsoever. Typically, these very poor people are unemployed or find very irregular casual labour earning in the region of NRs. 900 per month. Often the only household member working is a child under 16. Access to all types of environmental services is also difficult, they may not have easy access to water or toilets.

A group which has been referred to as 'middle poor' defines those households which have more security and income than the very poor but are susceptible to upwards and downwards movement. They are more likely to earn daily wages in the range of NRs. 1500-1800 per month, but may be quite insecure in their employment or income earning potential. Many are porters, bus conductors, labourers, and sweepers / conservancy workers. Their household sizes may be smaller (8-10 members), occupying kutcha dwellings with some access to communal services. Some may educate their children to 5th standard but the girls are often then occupied supporting the women in household activities. Many work in domestic situations for little money but with the hope of a safety net during a crisis. It is likely that these householders also have severe problems accessing basic services, but with encouragement and capacity building, may be likely to enter into community initiatives in water and sanitation and possibly solid waste. This group is most likely to be affected by the work conditions of unregulated private sector.

Those households referred to as 'better-off poor' appear to have more regular employment or income of around NRs. 2000-3000 from low level government jobs, semi-skilled or factory work. Generally they live in a more permanent and secure setting. In a crisis such as unemployment or ill-health, their stability and income enables them to borrow money from local merchants albeit at interest rates of between 36-60% per month. In general, they are more resilient to shock than the other groups. They have relatively better access to services, perhaps even water connections and latrines. This group is most likely to be interested in waste provision and with capacity building might engage in initiatives to improve solid waste services.

Poverty in Biratnagar²³ is characterised by unemployment and meagre wages (in the range of NRs.900-Rs.3000 (\$13-\$40) per HH per month and extremely inadequate living conditions. A simplified attempt to disaggregate the problems, needs and capacity of the poor for participation in service delivery revealed that the poor have very different livelihoods with very different opportunities than those very poor groups that battle with survival. This information (summarised in Figure 3.1 and set out in Annex B) suggests that a pro-poor approach to private-public partnerships in Biratnagar in general, and in the solid waste sector specifically, would need to accommodate the heterogeneity of the low-income section of the population.

While the improvement of environmental services is highly prioritised by those living at or near the poverty line, the very poor are primarily concerned with the day-to-day survival of the household. That is not to say that they do not need improved services, this would significantly improve their quality of life, but their pre-occupation with obtaining food simply places service delivery lower on their list of needs and they are likely to generate very low quantities of waste. This is particularly relevant in relation to solid waste services that are not seen as essential and are not valued environmentally or socially.

One of the fundamental problems of delivering solid waste services in Biratnagar therefore comes with the belief that it is the government's responsibility to pay for solid waste collection and disposal – that this is a government problem. Amongst poor communities, this is accompanied by a lack of understanding of the hygiene and health implications of uncollected solid waste.

4 The Solid Waste Management Partnership in Biratnagar

The concept of private sector participation in the delivery of municipal services was introduced to the city of Biratnagar in the 1997-98 in the solid waste sector. No other municipal public-private partnerships existed or have been developed since. The partnership itself has progressed from a dubious arrangement on the verge of collapse, to one where the operator has developed the confidence of the council for the services provided. Notwithstanding this achievement the partnership is still vulnerable and the municipality has not taken any significant steps to bring about a sustainable and viable arrangement.

Establishing a Solid Waste Management Partnership

A partnership for integrated solid waste management services in Biratnagar was first discussed in 1996 when an international businessman proposed to the municipality that they enter a joint venture with his US-based company, Americorp Environmental Services Incorporated (hereafter 'AES Inc'). It is now known that he came to Biratnagar Sub Municipal Corporation (hereafter referred to as 'the municipality') after the Kathmandu Metropolitan City declined his proposal to establish a private-public partnership for the management of solid waste in Kathmandu. In Biratnagar, he found a willing partner, a municipality keen to enhance their own resources with those of the private sector and eager to delegate responsibility for solid waste services.

The first tangible milestone in the course of the negotiations was the submission of a document produced by AES Inc. called an *Environmental Impact Assessment Report*. It outlines the objectives and methodology, baseline information, potential impacts,

²³ This simple analysis for the purposes of this case study was carried out with the RUPP community organisers. We are very grateful for their support.

measures to be taken for the mitigation of adverse impacts and the proposed monitoring arrangements. While not strictly an environmental impact assessment, this document set out the proposal for a franchise/concession partnership arrangement between AES Inc. and the municipality for solid waste management services in the city.

The means by which the municipality arrived at an agreement amongst themselves or with AES Inc. is not clear, but in 1997 the proposal was accepted and a contract was finalised. The arrangement incorporated a joint venture called BMC-Americorp Environmental Services Group (hereafter called Americorp) in which the municipality was given, without investment or risk, a 10% share in the company. Decision-makers in the council were attracted and convinced of the benefits a private sector partner could bring - not only in technology, skills and financial resources - but also that the partnership would become a profit making concern and bring additional revenue into the council.²⁴

The process adopted by the Council to establish the contract was not consultative at any level. Prior to the signing of the contract in 1997, there was no consultation process undertaken with civil society. The trade unions, while opposing a partnership with the private sector in basic services, had little influence over the process. The Council did not seek independent advice, but managed the process entirely on the advice provided by the prospective partner-operator.

The proposal put to the municipality by an operator soliciting for work was accepted at face value. No PSP or SWM consultancy support was commissioned for contract preparation. The municipality did not question the approach, the authenticity of the private operator or the technical feasibility of the proposal, ostensibly because the municipality was not allocated any financial risk. This means that during the contract development and proposal stage the municipality did not commission or carry out any studies to test the viability of contract options, neither did they seriously question the validity or feasibility of the technical proposal. Similarly, no institutional or financial appraisals were carried out and no willingness-to-pay surveys were undertaken to test community reaction to the introduction of fees for rubbish collection.

The council did not establish a competitive tender for the work or introduce mechanisms that would ensure authenticity and transparency. The initiative was not underpinned by the knowledge of standard forms of contract, or exploration into international best practice and lessons in municipal solid waste management partnerships. The financial incentives incorporated into the proposal, the charisma and apparent technical proficiency of the company representative and the written support of the United States Embassy had provided enough comfort to the municipality.

While some progress was achieved in the initial stages (e.g. the purchase of a landfill site, proof of equipment orders etc), unknown to the municipality, the Americorp representative was borrowing indiscriminately from a range of people and businesses in Kathmandu and Biratnagar. One of the main investors underpinning the initiative, (apparently until finances arrived from the US) was a Kathmandu-based engineering consultancy called SILT named in the EIA team. SILT was interested in entering the waste management sector and keen to join a profit-making venture. At the personal request of the AES Inc. representative, SILT loaned over NRs. 2 million (approx. \$30,000) for the works to proceed in Biratnagar.

²⁴ This proposal for the municipality to bear no risk, but to potentially profit from the partnership has been described as a utopian situation. Evidence elsewhere suggests that SWM is rarely a self-financing operation and such an incentive to municipalities is rarely offered, and the profit element is rarely meaningful.

After 6 months however, a number of investors realised that the financial promise of NRs. 121.3 million (\$1.73m) made by AES Inc. was not being honoured. Concerns were raised that the municipality had been lured into a partnership arrangement which would enable the AES Inc. representative to leverage loan capital from banks which could be diverted into private accounts. The local businessmen involved did not verify the legitimacy of the operator through financial checks and assessments of previous work. In the final event, it was the local banks in Biratnagar that finally exposed the financial incapacity of the company. The rejection of the loan applications exposed AES Inc. and the instigator of the partnership fled the country.²⁵

The disappearance of the Americorp Director from Biratnagar left the municipality politically rather than financially exposed. SILT and a number of high level officials and politicians had been personally misled. This resulted in widespread embarrassment and financial exposure, and with that a strong motive for associates to step in and establish a viable solid waste operation. At the same time a number of employees of the operator approached SILT to take-over the management of the company. After consideration, and particularly since they were already visibly implicated in the project (they had invested in SW equipment and a pilot project had already been launched) SILT agreed. With this, 90% of the BMC-Americorp shares were transferred to their ownership. However by transferring these shares, SILT unknowingly took responsibility for the significant debts incurred by Americorp under its previous management. This had disastrous financial consequences and some two years later local businessmen continue to present outstanding debts for repayment. SILT estimates that they have paid over \$200,000 to various creditors of the original Americorp venture.

SILT have continued their role since 1998 and have established themselves as a committed and stable partner in solid waste activities. While the process of working with the municipality was initially undermined by the fraudulent start and the need for SILT to develop skills in SWM, the municipality is now convinced of their genuineness.

The Existing Contractual Arrangement

The arrangement under which the operator now undertakes solid waste services in Biratnagar is a complex agreement between AES Inc. and Biratnagar Sub-Municipal Corporation. It comprises the spurious initial contract (now partly ignored), a number of informal agreements and an additional service contract. Despite the rather ad hoc nature of this agreement, the original contract is still the legal grounds on which both parties continue the partnership.

The current franchise / concession arrangement strongly favours the municipality in a situation where:

- the private contractor assumes all the risk;
- the municipality is eligible for 10% of the profit, but no loss or investment;
- fee collection is the responsibility of the private contractor, the municipality has no liability for non-payment, although it was anticipated that the municipality would provide an initial subsidy until cost recovery and anticipated coverage is reached;

²⁵ The promise of NRs. 121.3 million (\$1.73m) for the purposes of specialised garbage trucks, plant and land did not materialise before Americorp were exposed, in the final event only one computer and one vehicle were provided to the operations.

- the contractor is responsible for developing its own customer base for door-to-door collection, although the municipality plays some role in facilitating this process;
- the private contractor undertakes to develop a landfill site and recycling facilities and to make this commercially viable without contribution from the municipality.

Figure 4.1
Original Contract

Issue	Contract Provision	Comments
<i>Parties to the agreement</i>	Biratnagar Sub-Municipal Corporation (the municipality) Americorp Environmental Services Group (AES Inc.) (the operator)	AES Inc. supported their proposal with a letter of recommendation from the US Embassy.
<i>Ownership</i>	A joint venture BMC-Americorp in which the 90% ownership is AES Inc. and 10% of the share ownership is with the Municipality The landfill site and the recycling plant are to remain in the ownership of BMC-Americorp for the life of the facility.	Without any investment, the municipality was given 10% share in the BMC-Americorp venture.
<i>Duration</i>	10 years	
<i>Objectives and scope of the agreement</i>	The provision of integrated solid waste management services including: storage, collection, processing, recycling and reuse and final disposal of household waste including the design and management of a sanitary landfill. Household level services are to be provided to the entire municipal area every 3 rd day.	There is no specification of method, standards of cleanliness to be achieved, or types of waste to be collected. The implication of the scope of the agreement are that the whole waste cycle would be self sustaining after an initial period (despite the lack of sanctions available to the private operator).
<i>Financial requirements</i>	The private operator commits: NRs. 121.5 million (\$1.73m); a 'modern safety tank suction cleaning tanker'; and computer hardware and software for the municipality for revenue collection. The municipality makes no capital investment, but is required to provide NRs. 2.5 million (approx. \$36,000) per annum for the first 2 years of the contract to subsidise operating costs in the start-up period. The cost to be decreased proportionately over this period as service charges are collected. The rate of decrease shall be 'mutually agreed upon'.	The method and timing of the municipal subsidy payments is not specified.
<i>Cost recovery</i>	The municipality is responsible for collection of the service charge and penalties (at a commission of 5%). Americorp to provide assistance in a computerised billing system. The domestic service charge is set at NRs. 20 per month (for the collection of 2 containers) plus the initial purchase of the containers (NRs. 100). Differential charging is provided for various residences, hotels/tea stalls and shops, and government facilities.	This is the primary area of revision between the contract and the agreement being implemented. The municipality currently plays no role in collection.

<i>Environmental requirements, Worker Conditions, and health and safety requirements</i>	Not mentioned	Although the objective states that there will be no negative impact on the environment, no requirements are specified in the contract. (e.g. enclosing trucks or covering loads). The contract is silent on worker salaries and conditions, and health and safety requirements.
<i>Rights of each party</i>	Not mentioned	
<i>Renegotiation</i>	Not mentioned	
<i>Risks</i>	Not mentioned	
<i>Performance measurement, monitoring</i>	The contract stipulates that a monitoring and evaluation unit will be established with the membership of both partners.	There are no performance standards specified in the contract. No provision is made for penalties for non-performance. No quantitative outputs are defined (such as the amount of waste to be collected).
<i>Regulatory requirements</i>	Municipality to request exemptions on behalf of the operator	
<i>Dispute resolution and arbitration</i>	Problems shall be mutually solved by the parties, and if not, shall be solved in accordance with the rules and regulations of the Nepal Arbitration Act.	

The Biratnagar partnership for SWM services has suffered from the outset by a lack of access to investment capital. Given the dubious nature of the original arrangement, this investment has not been forthcoming and the viability of the whole operation has depended upon the injection of funds from the local partner organisation. However much of the finance made available by SILT has been used to pay off the bad debts incurred by the original entrepreneur, and as a result, the whole operation is run on a shoe-string. In practice, there has been no capital investment - in contrast to the ambitious proposal of \$170,000 per annum. Activities have therefore been constrained by a lack of vehicles and equipment - the tools of the solid waste trade.

The arrangement as it stands today contains a number of unsustainable elements. In practice the municipality does not collect the fees stipulated in the contract and has never done so. Services are not now provided under a contract whereby the municipality charges and collects customer fees and then pays the operator the fees due, but through a franchise arrangement whereby the operator is responsible for billing and collection of revenue for his services in particular areas. In addition, the municipality has extended a concession arrangement for disposal (landfill, recycling, reuse) of waste collected within the municipal area. The contract still provides a number of dubious benefits for the municipality and the current arrangement as it is implemented allocates more risk on the private operator than the initial arrangement proposed.

Furthermore the contract stipulates that the municipality is to pay NRs. 2.5 million of 'subsidy payments for operating costs' to the operator annually for two years. To date the municipality has paid only NRs. 1.5 million arguing that the full amount is not payable as the collection services only cover 25% of the town.

The nature and scope of the Biratnagar partnership

- *Scope of waste collection*

Under the partnership the city has begun to establish an integrated waste operation linking its traditional upstream waste disposal activities to a new downstream

household collection service. At present it is estimated that the private operator provides over 50-60% of the service and covers about 35% of the city.²⁶ This includes all disposal services, and about half the transfer and collection services (mainly in the core city area). This division is simplified in Figure 4.2.

Figure 4.2
Current Division of Responsibility for Solid Waste Services in Biratnagar

Municipality	Americorp
▪ collection of waste (up to 20m ³ per day)	▪ household collection (22 m ³ per day)
▪ street sweeping (28km in ward areas) ▪ drain cleaning;	▪ street sweeping (14 km in core area)
▪ public awareness campaigns	▪ transfer to disposal, recycling depot; ▪ landfill, incineration of hazardous, medical and industrial waste, paper recycling; ▪ developing innovative processes

The total volume of waste collected in Biratnagar is currently in the order of 36-40 cubic metres per day. Prior to 1998 and the Americorp arrangement, it is estimated that the municipality collected and disposed of 30 cubic metres per day. The household collection service (discussed later in this section) added 20-25% to this collection rate. It is currently estimated that this rate of collection represents somewhere in the region of 80% of the waste generated in the city. If accurately estimated, this proportion compares favourably with coverage achieved elsewhere.²⁷ Of this, Americorp collects and transfers around 22 cubic metres (at around 0.6 cu metres density) mostly comprising organic materials (approx. 60% of the total) with the municipality collecting, transferring and dumping the remainder.

- *Disposal*

For the last 4 years, in the absence of a satisfactory and functioning landfill site, the waste is simply dumped at the municipal dump sites (open ground and along the river banks). Despite the undertaking made in the original proposal to stop dumping, there has not been significant improvement in dumping practices since the private operator took over key disposal activities.

Apart from the lack of finance for the development of the disposal facility, the new representatives of Americorp have highlighted that the plant and sanitary landfill proposal (lined, gas emission and leachate management system) outlined in the original design document is neither financially or technically workable. The investment plan placed a high degree of emphasis on this final stage of disposal and recycling: the expected NRs. 121.5 million (approx. \$1.73m) of capital investment to be provided by Americorp over 10 years amounts to \$14,000 per month, or \$1 per capita per annum for the specific purpose of the landfill and recycling²⁸

Second, the minimum usage of the plant proposed in the original contract was for 200 tonnes/day, yet estimates of the quantity of waste generated in the city at present amount to only 25-30 tonnes/day. The size of the plant proposed is therefore almost

²⁶ The core areas of the city allocated to the operator are more densely occupied and generate significantly more waste than the outlying areas serviced by the municipality.

²⁷ In Latin America where municipal solid waste management increasingly involves the private sector, waste collection averages range from 50-70% in capitals of low-income countries, and 80-85% in middle income countries of overall waste generated.

²⁸ This is an extremely high figure when compared with other cities in the region. Average landfill costs in South Asia are in the order of \$50,000 per annum and \$0.25 per capita per annum (Blore 1999).

10 times that required for waste generated in Biratnagar. As there are no agreements in place to import waste from neighbouring municipalities, and these look unlikely in the immediate future, there is now recognition that the proposal was technically impractical. Third, the 4.5 hectares of land identified and bought by Americorp²⁹ for the purposes of constructing landfill and recycling facilities is located outside the Biratnagar municipal area. This location is now considered untenable, and a new site has recently been leased within the municipal area under the control of the municipality.

In the future, the operator has ambitious plans to process the waste on the new site.³⁰ This will include systematic sorting, grading, reuse, recycling and final disposal of household waste. The waste will be separated into garden waste for briquette making, vegetable waste for vermi-composting, household waste for composting and recyclable waste for recycling paper and plastic.³¹ Given the level of bio-degradable material, the facilities now planned are focused on these activities and not on the disposal previously proposed.³² At this stage the municipality has not proposed any cost sharing or subsidy to underpin this final stage of the solid waste operation.

- *Transfer*

Transfer of the solid waste collected, is undertaken by both the municipality (in the outlying areas) and the operator (in the core areas). For this purpose, the municipality runs 3 tractors and one tipper. The operator however separates the waste, to the extent possible to provide appropriate waste materials for some of the small-scale recycling activities. Much of the household and commercial waste transferred by the operator has therefore been separated into biodegradable and non-biodegradable waste at the inner-city headquarters building.³³ The operator then utilises 4 tractors and 2 electric vehicles for the transfer process.

- *Collection*

The Americorp partnership introduced the concept of a household level waste collection service to Biratnagar for the first time. The contract was initiated through the piloting of door-to-door collection for 700 households in the core area of the city. (This area covers 8 sq. km with a total of 9,000 residential and commercial units). Since the pilot, the service has expanded to cover 2,400 households, or 25% of what Americorp sees as the potential customer base. Americorp also collects commercial waste using 2 units of 75 litre waste containers and served by electric collection vehicles.

The household collection service is designed as the first stage of an integrated system linked to transfer, separation, recycling and disposal. There are currently 14 cycle

²⁹ It is suggested that the land was paid for on credit and that the price paid for the site was 4 times the market value. It is now used for growing vegetables.

³⁰ The agricultural land to be used for the final disposal and recycling of waste has been leased to the Operator for 10 years. The terms of the lease are that the Operator will pay the owner annually, in cash or kind, the equivalent of 2 tons of rice (that normally harvested each year). At the completion of this lease period, the land will revert to the current owner, along with the facilities and services constructed by the Operator. This type of informal agreement is typical of the ad hoc approaches adopted by the Operator. It could be argued that this sort of action does little to build confidence in the viability of the arrangement, but financial constraints have offered little alternative.

³¹ Since separation and recycling operations have yet to begin it is not clear whether this will be an economically viable activity in the medium term.

³² The General Manager of Americorp argues that it is possible to reuse, recycle, compost at least 80% of the waste and that the other 20% will be taken up 'by others needing to fill their land'. It is not altogether clear where this 20% will be disposed.

³³ This has caused some complaints from neighbours, but not to the extent that the operator has had to change the location of sorting activities.

rickshaws, two electrical vehicles, and one tractor engaged in these door-to-door collection activities. The catchment area is divided into 3 zones with two collections per week for each zone. Each household customer is assigned 2 plastic bins/ buckets for the separation of waste into organic and inorganic matter. Initially these bins were of 25 litre capacity but this has now been reduced to 17 litres to minimise investment costs. There is a serious question as to whether this separation at source works effectively, but at this stage the operator it is still pursuing this approach.

Figure 4.3
Commercial and Domestic tariffs

Customer	Tariff charged (NRs.)
Domestic customers twice-weekly service	NRs. 20 per month
Petty traders paying small amounts on a daily basis	NRs. 1 per day (NRs. 25-30 per month)
Small and medium sized commercial units paying	NRs. 75 per month
Medium sized units paying	NRs. 150 per month
Larger units paying	NRs. 1,000 per month.

Americorp still charges the fixed tariff of NRs. 20 per month for collection from domestic customers set down in the original contract. Other tariffs range from daily contributions in areas of high waste concentration such as the vegetable market, to NRs. 150 for commercial units. The latter have been divided into petty traders (likely to be poor traders) paying small amounts on a daily basis where the high density of user concentration allows for easy payment collection. In addition there are currently 7 commercial waste generating customers that are charged NRs. 1,000 per month. This tariff structure is outlined in Figure 4.3.

The charge of NRs. 20 (\$0.28) setdown in the initial contract, is currently applied to all domestic customers and the charge is currently applied irrespective of household income or affordability. The tariff is neither sustainable nor effective for private sector operations. In the near future, the operator will propose increases in this tariff to NRs. 25 for middle-income customers and will introduce targeted initiatives in low-income areas.

The operator has, however, established an effective system of collectors (called Community Motivators) to collect the monthly payment directly from the user. Payment to these staff members represents 12% of staff costs but it is likely that cost recovery would be much lower than the current 72% if this system were not in place.

Given that the operator is, in practice, responsible for billing and collection of the fees for the collection service, one of the main problems to date has been the lack of an effective mechanism to ensure payment by individual households and units. For the first 8 months of the contract, there was a 10% collection rate. 90% of the customers receiving the service worked under the assumption that this should and would be paid for by the municipality. Due to this low level of payment, the operator has introduced a legal contract specifying terms and conditions of payment. This increased the payment ratio to 72% and now 28-30% of contracted customers (who have elected to take the service) continue to use, but not pay for, this collection service. The operator does not see it as being in their interest to stop the service to those defaulting in their payments. Instead the operator focuses on raising awareness and encourages individuals and businesses to join the programme. Cash motivators and the General Manager himself have one-to-one discussions with defaulters. This approach is time consuming and ultimately not sustainable as the size of the customer base grows.

While the municipality and operator are currently discussing how to improve the level of cost recovery (e.g. the municipality may decide to integrate the waste collection payments into the general tax system, and may refuse other administrative services³⁴ to wilful defaulters) the issue is not on the agenda for the amendment currently being negotiated.

Another key aspect of the private operations concerns the maintenance of vehicles and equipment. While the reason for the acute lack of maintenance may have been caused by the financial problems of Americorp undermining the proposed programming, it would also appear that the vehicles (owned both by the municipality and Americorp) have been left unmaintained for long periods. This was visible in the badly rusted transfer bins and an electric vehicle being inoperative for 6 months owing to a dead battery.

- *Street Sweeping*

Until recently, the municipality performed the function of street sweeping and associated waste transfer for the entire municipality. The Solid Waste Sub-department employed 100 sweepers (some 20-25% of the entire municipal staff), mostly on a temporary or casual day wage basis (only 12 of these staff were employed on a permanent basis). The operations required 3 tractors and 1 tipper. The main activities included sweeping, drain cleaning, lifting, transporting and disposal of waste in 22 wards. By far the most significant part of the work was the sweeping of 42 km of road.

In late 1999 however, the municipality elected to establish a service contract for street sweeping in the core areas of the town. This decision was made in response to labour disputes, but also because the council were now confident in contracting out solid waste activities. The contract was not tendered, but was negotiated with Americorp as the only contractor involved in city solid waste activities. Prior to the implementation of the contract, the municipality paid out approximately NRs. 1.86 million (\$26,600) annually for this work, but negotiated a contract figure of NRs. 1.56 (\$22,300) million per annum for 3 years to cover the same geographical area. Despite the fact that the operator calculated and agreed to this sum (approx. 80% of the public sector costs)³⁵ in practice the costs have been significantly higher and the private operator is now currently seeking an increase to NRs. 1.68 million.³⁶

The service contract for street sweeping was taken on (or perhaps initiated) by Americorp for two primary reasons. Firstly the sweeping contract enables them, through direct contact with customers to encourage households to join the household collection scheme. Secondly, by assuming responsibility for street sweeping in the core city area and providing a more effective service, Americorp believed that it could cut down the incidence of households dumping waste on city streets. This would, in turn, provide a greater incentive to households to make use of the household collection service improving their customer base.

Data collected by Americorp suggests that the street sweeping function has been effective to this end. Figure 4.4 illustrates the improved take up of household collection services after Americorp began providing the street sweeping service. This

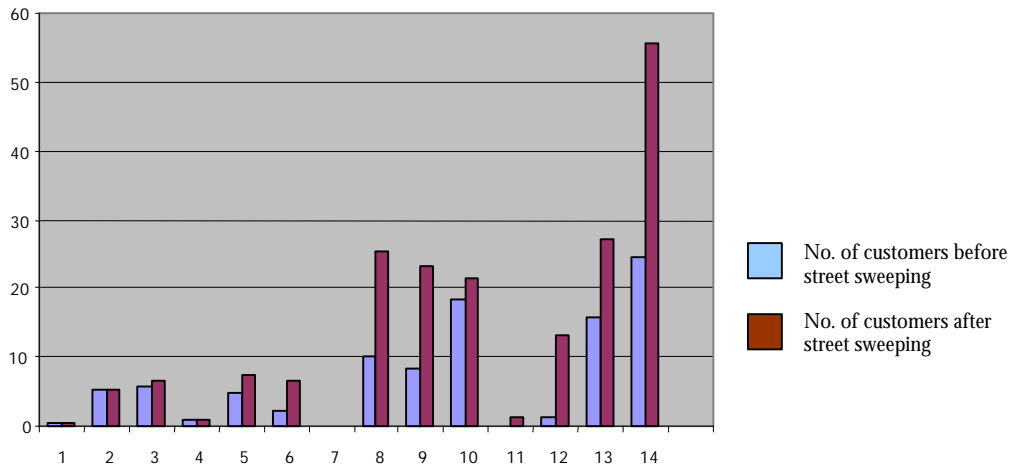
³⁴ Applications for citizenship, business licences, recommendations for land purchase, asset transfer and permission for house construction

³⁵ It is likely to be less than 80% as municipal administrative costs (amongst others) would not have all been factored into the municipal estimate of their costs.

³⁶ More recently expenditure has increased by 30% because of the increased costs of fuel and wages in the region.

process has resulted in marked improvements to the cleanliness of the streets, has led to an increased awareness amongst the public of solid waste issues, increased acceptance of a private sector role in solid waste services, public acknowledgement that the private sector are more successful and consequently, improvements in willingness to pay for household collection. In some areas the numbers of households and shops signing up for private collection services has doubled since Americorp began the street sweeping service and there is evidence that shop keepers are now more willing to pay for the service rendered.

Figure 4.4
Effect of Street Sweeping Work on Household Collection³⁷



- *Income and expenditure*

The current annual cost of the services provided by the operator is estimated at nearly NRs. 3 million (approx. \$42,500 per annum) or \$0.25 per capita per annum (this represents 35% of the area covered and between 55-60% of the waste collected). Given the higher municipal cost structures, and based on estimates provided by the municipality for 1998-99, it is likely that this represents somewhere in the region of 40% of the cost for municipal solid waste management.³⁸ However the figure is significantly affected by the lack of a profit element, the lack of any significant disposal costs and the various measures that the operator is taking to continue the arrangement. As such the actual cost of municipal solid waste services in Biratnagar is estimated to be some 10% higher and in the region of \$0.60-70 per capita per annum.³⁹ This is commensurate with some of the lowest figures reported by the World Bank elsewhere.⁴⁰

While it is impossible to accurately report municipal costs, the operator has created a relatively transparent method of presenting the expenditure and revenue figures for the operations. This is illustrated in Figure 4.5.

³⁷ Figure 4.4 provided by Americorp from existing data

³⁸ For the 1998-99 financial year it is estimated that the municipality spent NRs. 7.2 million on solid waste management services.

³⁹ It is not possible to provide an accurate calculation because the municipality does not ringfence solid waste costs. Instead cost for wages are absorbed in the payroll budget heading, for fuel in the consumable budget and for vehicles through the general repair and maintenance budget.

⁴⁰ In 1995, per capita expenditure in Lahore was \$1.77, in Dhaka per capita expenditure was \$1.46 and in Accra the per capita expenditure on SWM was \$0.66. Information extracted from World Bank, 1999 p20. Given the low waste generation rate in Nepal, the low figures for Biratnagar would appear consistent.

Figure 4.5
Americorp Expenditure⁴¹

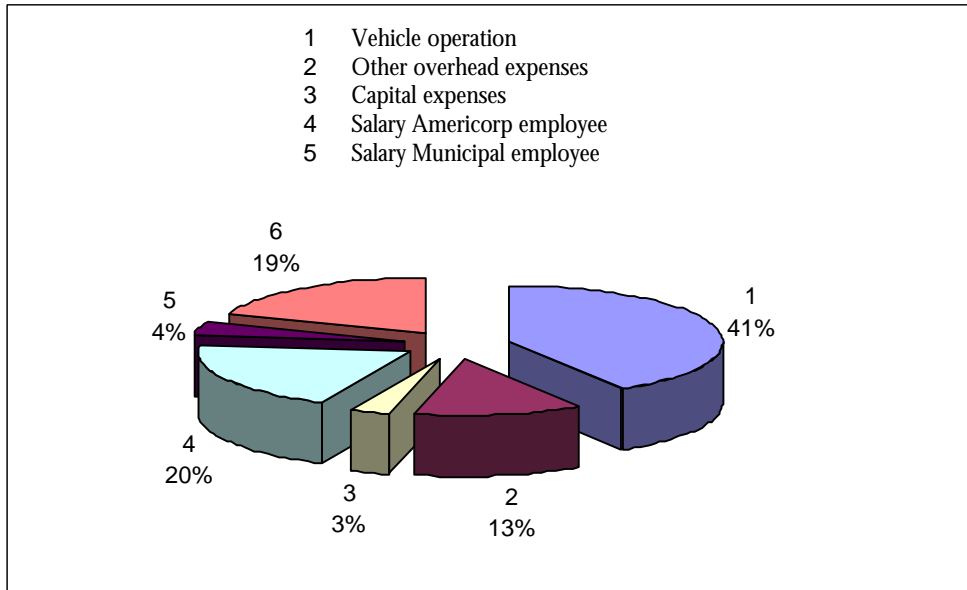
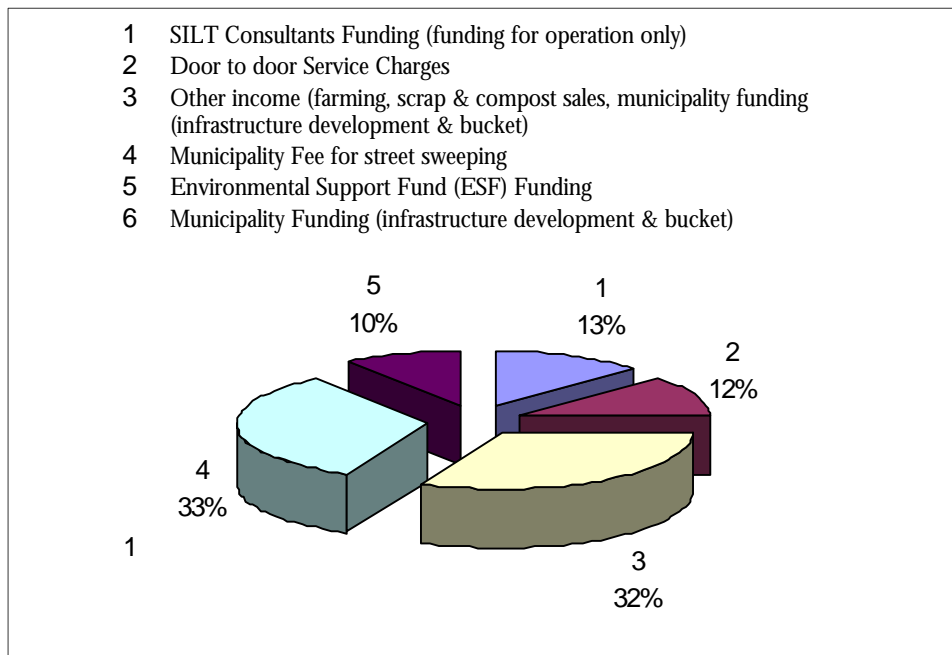


Figure 4.6
Americorp Revenue⁴²



The general pattern of income sources is illustrated in Figure 4.6. Americorp thus shows an annual deficit in the order of NRs. 670-700,000 (a monthly deficit of around NRs. 56,000). The General Manager of Americorp manages to sustain the operations by not paying his own salary and thereby reducing outgoings by NRs. 650,000. It is

⁴¹ Figures 4.5 and 4.6 provided by Americorp from 1999-2000 data.

⁴² (Figures 4.5 and 4.6 provided by Americorp from 1999-2000 data).

clear that this situation is not sustainable in the medium term or may even become untenable in the near future.

Americorp stress that they have presented the costs to municipal decision-makers clearly indicating they are underpaid for their operations, but political manoeuvring constrain the municipality from bringing about significant change. There is a fundamental lack of understanding within the municipality (and to some extent by the operator) that solid waste operations are rarely a profitable concern and that most solid waste operations are supported from municipal revenues.

- *Staffing*

There are various presentations of the terms and conditions of workers in solid waste in Biratnagar,⁴³ each provide a slightly different perspective on the relative benefits and drawbacks of working for the private sector. Notwithstanding these anomalies, it is known that there are about 55 workers and 15 employees⁴⁴ making up the Americorp workforce. This includes administrators, drivers, collectors, sweepers, and a number of staff involved in recycling activities and management. Staff are either (a) employed directly by Americorp on a permanent basis; (b) contracted directly by Americorp on a temporary basis; or (c) seconded to Americorp by the municipality and technically remain under the permanent employment of the municipality.

The cost breakdown provided by the operator indicates 15 staff employed in administrative positions (called indirect manpower). These employees cover a range of management, accounting, administrative marketing and cash collection functions. Their salaries make up approximately 26% of the monthly expenditure.⁴⁵ Cash collectors and supervisors earn between NRs. 2100 – 3800 per month (a wage not dissimilar to the sweepers).⁴⁶

The sweepers and waste collectors working directly for Americorp are employed on a temporary basis and earn approximately NRs.1800 – 2500 per month (this figure varies based on the number of days worked). Workers can supplement this income by scavenging and generally earn up to NRs.500-900 per month by selling non-biodegradable items into the local trade. They currently work 6-7 hours per day and are not paid overtime. The main concern they expressed during the interview was that their salary is lower than that paid to municipal sweepers.

Prior to the street sweeping service contract being placed with Americorp, 100 municipal sweepers were directly engaged by the municipality. Following the shift in responsibility for the core area street sweeping to the private operator, 20-25 municipal staff employed on a permanent basis were seconded into the Americorp operations on the same terms and conditions (wages, leave or social benefits) as they had when they were employed directly by the municipality. Their current wage level is NRs. 3000 per month. Municipal officials report that they were having some labour problems prior to the operators taking responsibility for partial street sweeping functions, and the operator also reports problems in motivating staff. In the past under the supervision of the municipality, the sweepers worked 3-4 hours per day, but were paid a full time wage. With the more strict supervision of Americorp, sweepers now work a full 7 hour day (although low morale continues to affect performance).

⁴³ Interviews on this topic included the workers themselves, the Americorp General Manager and the Municipal Engineer.

⁴⁴ This distinction between employees and workers is made under the national labour laws

⁴⁵ This proportion includes the payment of NRs. 50,000 to the general manager. This salary is not always included in the expenditure analysis, and the General Manager Americorp stressed that he is not currently being paid.

⁴⁶ Americorp Cost Analysis 1999-2000

The Unions in Nepal are politically divided and are relatively immature organisations having arisen only a decade ago. Nevertheless, Biratnagar is historically a highly politicised and unionised part of the country due to the importance of the industrial sector. The Unions were consulted over the proposal to award the management contract for sweeping, although their negative response did not influence the process. The Municipality proceeded with the agreement and there has been only limited resistance since. Although workers have found the regime under Americorp less flexible, more demanding and more performance oriented than previously, the majority of the workers have not joined a union. Workers interviewed reported that they have no involvement with the unions as they believe it only creates problems and disputes. They do not have any relationship with Americorp managers but their supervisors seem to deal with their problems effectively and their major complaint is the low pay. Americorp however point to union problems as a primary constraint to effective delivery and cited problems they had with the recent dismissal of an employee.⁴⁷

Despite the fact that the contract does not specify any health and safety requirements, at the outset the operator did provide some limited uniforms and wet weather gear. These initial efforts made by the operator to promote health and safety seem to have failed both because of the lack of awareness amongst the workers (e.g. a large number of workers simply forget to wear their uniform and do not see the benefit of covering their clothes) and the half-heartedness on the operator's efforts (e.g. workers have not been provided with gloves and sweepers use very primitive tools for picking up the waste).⁴⁸

- *Management and Monitoring*

The three primary actors in the partnership on the municipal side are the Mayor, the Deputy Mayor and the Supervising Engineer. Strategic aspects of the partnership are managed by the Mayor, with contributions from the Deputy Mayor and the Board. Although the original contract was signed and agreed by the former Mayor, the present Mayor is thoroughly committed to the concept of a partnership for solid waste management and to an increasing role of the private sector to achieve effective and sustainable municipal services. Notwithstanding this commitment, management to date has not been informed by experience elsewhere and has not ultimately brought about a sustainable arrangement. To this extent the partnership lacks strategic management and planning. The coalition nature of the council has also meant that, on occasion, disagreement and debate on policy matters has resulted in compromise and delays in decision making. The Municipal Board members likewise are supportive of the partnership arrangement and any disagreements would seem to be over minor issues. Despite the fact that the majority of council members are in favour of the partnership there is still a need to mobilise further support of ward commissioners and members to improve capacity for decision-making.

The private operator has been pursuing a contract amendment for some time. The changes proposed address some, but not all, of the inadequacies of the initial contract and begin to address some of the issues threatening sustainability. It is not altogether clear why there have been delays in finalising this contract amendment.⁴⁹ The operator has proposed that the amendment will:

⁴⁷ Recently the dismissal of a worker because of drunkenness led to a dispute with the unions who demanded that the operator prove that the employee was drunk on the day in question.

⁴⁸ Some of the workers interviewed said they did not wear the uniforms because they were ill-fitting and uncomfortable, at the same time, there were a number in wet weather gear.

⁴⁹ The municipality cites the legal constraints of properly establishing the company name, while the private sector alludes to political constraints within the municipality and some of deficiencies in decision-making of the municipal partner.

- change the name of the contractor from Americorp to SILT Environmental Services (Americorp) to remove the international implication and to finally remove the association with the fraudulent American representative;⁵⁰
- permit the operator to increase the household collection tariff to NRs.25 per month;
- stipulate the terms and method of payment for the household collection subsidy;
- stipulate a subsidy for 50% of the cost of the household buckets; and
- specify enforcement and penalty procedures.

Operational aspects of the partnership are managed by the Deputy Mayor and Supervising Engineer. The Monitoring and Evaluation Committee defined in the contract is headed by the Deputy Mayor and comprises the Engineer responsible for waste and the General Manager of Americorp. Meetings are held monthly to discuss problems and progress, and has been a helpful and effective vehicle for addressing a number of the routine obstacles facing the partnership. All parties generally agree on the basic parameters and goals.

The Deputy Mayor therefore plays an active role in day to day supervision of the partnership and stresses that, despite the problems to date, the partnership has introduced and proven the effectiveness of private sector management practices in municipal operations. The municipal engineer in charge of waste is the main liaison. He believes that the partnership arrangement has had a positive impact on waste operations although he is aware that his own lack of specialist knowledge in solid waste has limited his ability to understand the technical alternatives and to monitor the contract more effectively.

There is however very little monitoring as such. In the absence of any performance standards or understanding of the components of systematic monitoring, monitoring is informal and ad hoc in nature. At this stage the only way the municipality judges the performance of the operator is by public complaints which they receive and which they pass onto Americorp with the expectation that the problem will be immediately rectified. This is normally carried out satisfactorily, the operator is generally quick and co-operative in solving problems. Most complaints to date have been concerned with the collection rather than transfer or disposal of solid waste service indicating that there has been no visible deterioration of the upstream aspects of the service (transfer and disposal) since the private operator has been involved.

Nevertheless, the level of performance is not perceived as a problem and the quality of the service provided is deemed to meet expectations. Indeed, both the Mayor and Deputy Mayor pointed out that prior to the partnership there were many complaints from members of the public concerning poor collection and cleaning services in the city and that the number of these complaints has drastically reduced.

5 Key issues

The situation that has developed in Biratnagar over the last 3 years during the implementation of the partnership arrangement is a complex one filled with uncommon practices. Yet despite this, the Mayor reports that the majority of councillors are quite satisfied with the performance of the partnership - and that the council is in favour of further private sector initiatives in service delivery. From an objective viewpoint however, there would appear to be fundamental problems with this solid waste initiative that are not being addressed by municipal decision-makers.

⁵⁰ This was agreed as stage 1 of the amendment process.

Foremost among these is that the partnership, under the current terms, is unviable and unsustainable. This view is largely supported by the operator.

While many aspects of the Biratnagar case are unusual and unlikely to be widely replicated, the very existence of this PPP is instructive as it describes the sort of irregular partnerships that can develop. It therefore provides important lessons for development professionals and municipal officials alike. A number of the key issues are discussed further in this section.

- *Financial and Technical Viability*

One of the key characteristics of the arrangement, and one that differs from the norm, is that the private sector role in municipal solid waste management in Biratnagar has not led to a convincing commercialisation of the service. Typically, PSP is associated with improved commercial practices that include long term planning and rectify municipal accounting systems and do not capture costs or present grants and transfers in a transparent manner.⁵¹ However the partnership approach in Biratnagar has not led to strategic planning and budgeting for solid waste services in the municipality; the sector has not been 'ring fenced', a process which would isolate all the costs of the municipality providing solid waste services (including direct and indirect staff salaries, vehicles, repair, leases, interest on loans etc); and it has not led to an informed examination of the potential sources of revenue needed to support this improved level a service.

The lack of rigour on the municipal side is exacerbated by the less-than-commercial actions of the operator. Currently the only reason the arrangement can continue is that the private partner is willing to underwrite the costs of this loss making investment as part of a long term strategy to gain a stake in municipal environmental services in Nepal. The private sector operation is somewhat misleading and unreplicable and incomparable with other solid waste initiatives. The municipality does not appear to have taken on the importance of the sustainable financial management of the operations, but has inadvertently supported the under-reporting of Americorp costs. Moreover, there is little evidence to suggest that there is an understanding that solid waste management is rarely a self-financing operation and that it generally requires some public investment or subsidy from the municipalities own revenue sources. On the contrary, most actors in Biratnagar both private and public continue to make decisions on the understanding that at some point in the future there is significant profit to be made in solid waste activities.

The Biratnagar case also illustrates the sort of inappropriate technical (and consequently financial) options that might be proposed by operators inexperienced in the specific needs of developing cities. The initial technical scheme and its associated costs offered a contextually inappropriate and financially unviable proposition, there is little question in hindsight that they were incongruous in the socio-economic context of Biratnagar. Based on figures provided by the UN, Nepal appears to have one of the lowest rates of urban solid waste generation (at 0.50 kg/capita/day) and is only expected to increase to 0.60kg/capita/day by 2025.⁵² The high proportion of people living below the poverty line and the low levels of waste produced by this group account for this figure. The waste generated per head in Biratnagar is therefore only 50% of that generated in urban Thailand. These figures are consistent with the pattern of waste generation in relation to GNP per capita and consistent with small cities in

⁵¹ Bartone 1999

⁵² See World Bank (1999) p7. This comparison is indicative and the authors recognise the difficulties in comparing waste generation rates

Latin America.⁵³ Despite this, the operator suggested and the council accepted, a proposal relevant for waste generation rates of highly developed cities.

One of the simple lessons of the Biratnagar case thus relates to the lack of viability of high technology proposals and high levels of investment proposed at the outset. The lesson is then developed by the modifications that have been necessary to bring capital inputs in line with local conditions. Modifications proposed or implemented to date include the lower technology, lower cost options of:

- *the landfill site:* the original proposal for a sanitary landfill (lined, gas emission and leachate management system) has been abandoned;
- *the vehicles:* the original proposal for modern compactors has been replaced by simple tractor trailers.
- *the containers:* The provision of 25 litre waste bin containers to all households has been reduced to smaller, lower quality containers purchased at a lower cost but charged at the same rate.

Typically, in municipalities in low-income countries such as Nepal, expenditure on solid waste management is predominately made up of collection and transportation costs and not on disposal.⁵⁴ As a result costs are biased toward the micro-level of service. Biratnagar is no exception, the practice of dumping waste free of charge has continued into the contract to date and, at present, there is little to no cost associated with the disposal stage of the service. The cost of disposal elsewhere in the region of \$0.25 per capita per annum suggest that operational costs are likely to increase significantly when the practice of dumping is ceased.⁵⁵ It is likely therefore that solid waste operations within the town will require significantly more subsidy or a different financial arrangement for the partnership to continue once disposal costs are introduced.⁵⁶

At this stage however, the disposal stage is not being presented in this manner. The ambitious proposal of the operator is to run a self sustaining compost plant and recycling operation on leased land. This includes the construction of facilities and services for this purpose.⁵⁷ However research by Blore shows that the most valuable waste in South Asian cities is generally reclaimed at source and this limits the potential of recycling schemes. Picking over such waste is frequently considered to be a marginal economic activity.⁵⁸

- *The problems of franchising solid waste services*

Given the fact that the original entrepreneur had no intention of operating the service over any period of time, it is hardly surprising to find that the contract proposed was favourable towards the municipality and that the municipality is allocated very little risk. However, the agreement established in practice is far more onerous for the operator than the initial contract envisaged. Not only does the private operator now have the responsibility for collecting the tariffs for household collection services, by extension they take on the full risk of non-payment of service charges. In terms of municipal solid waste management, this franchise arrangement is unusual and this form of contract is rarely appropriate as it is generally very difficult for operators to

⁵³ Bartone 1999

⁵⁴ World Bank 1999 p21

⁵⁵ Cost overruns for disposal are common in South Asia (Blore 2000)

⁵⁶ There is little evidence of substantial private investment in disposal facilities elsewhere. In Hong Kong, one of the few cities to let a concession for a sanitary landfill, the government has paid for and owns the facilities in partnership with a private entity (Blore 2000). Concessions for compost plants have been arranged in Porto Novo, Benin and Semarang, Indonesia (SKAT 2000) and could be investigated.

⁵⁷ It is also not clear where these finances will come from.

⁵⁸ Blore 1999

collect fees from householders.⁵⁹ More commonly, the municipality pays the contractor/operator a fixed fee and the municipality recovers the cost from user charges (often a cess or property tax) or general revenues (such as inter-governmental grants) – effectively creating a management form of contract.⁶⁰ It is also not clear whether the municipality is aware that the current system whereby the operator is responsible for collecting tariffs is considered unviable elsewhere, or whether they are taking this approach to test the genuineness and capacity of the operator.

Another problem that has arisen for the operator is that the contract does not adequately specify the means and processes which will ensure that operational charges are levied and paid by service users. The operator argues that it is vital that there is a means of addressing non-payment through sanctions and enforcement. The municipality is also considering the introduction of a range of penalties and sanctions that might be imposed on defaulters.⁶¹ This might include refusing users other municipal services (e.g. citizenship applications, business licensing, land purchase, asset transfer and planning permission) unless payment for refuse collection is made. The more significant proposal under discussion is for the municipality to integrate the waste collection charge into the wider system of municipal tax collection without transferring the risk of non-payment to the municipality. The municipality stresses that it needs more capacity to formulate appropriate penalties and enforce sanctions. They argue that it is necessary for municipalities to have more autonomy to impose new penalties and fines and that amendments to the Local Self-Governance Act are required to enable municipalities to act.

- *Tariffs and Collection*

Neither the municipality nor the operator has demonstrated an understanding of the mechanics and implications of tariff structures and the (substantial problems of) and mechanisms for effective cost recovery for solid waste services. The simple tariff structure in place at present differentiates between domestic customers' twice-weekly service and commercial customers' daily service but the level of the tariff is not commensurate with the service provided. A simple comparative study indicates lower charges per household than other selected municipalities. At NRs. 20 (\$0.28) per month (1% of an average low-income household monthly income) the current tariff is one-third of a similar service provided by the Vientiane Municipality in Laos (which operates a cost-recovery approach) and where the equivalent cost is \$0.62 per month (2.5% of an average low-income household monthly income). In India, tariffs for household collection are generally in the order of IRs. 20 (\$0.45)⁶² per month in small cities and IRs. 40 (\$0.90) in large cities where the costs are higher and processes more commercialised.

- *Contract preparation*

The preparation and development of the contract in Biratnagar was not undertaken with the diligence and thoroughness essential for private sector participation initiatives. The lack of feasibility studies or comparative studies detailing the various options for the private sector role initially led to an inappropriate and unviable approach and arrangement. The municipality simply reacted to the proposals placed before it by the entrepreneur concerned who convinced officers and elected members that he possessed sufficient technical expertise and could therefore propose optimal

⁵⁹ Bartone 2000

⁶⁰ Bartone 2000

⁶¹ Under the Local Self Government Act a municipality may impose a fine of up to NRs. 15,000 (\$210) on any violation of municipal legislation. However laws rarely cover door-to-door collection so this service is voluntary. An effective sanction introduced in Chennai relied on neighbourhood groups applying sanctions in middle class areas (Anand 2000).

⁶² Anand 2000 and Blore 2000

solutions. In the absence of sufficient technical information on solid waste management the municipality was easily misled by the private party in the original contract negotiations as to what kind of waste service would be practical, cost effective and feasible. At the same time there was inadequate financial information on solid waste costs (although there was some data on area-wise expenditure) and a lack of access to comparative costs of municipal solid waste management initiatives elsewhere.

This lack of a thorough financial appraisal meant that neither the municipality nor the operator undertook any affordability or willingness-to-pay studies which would support or challenge the viability of the overall proposal and which would have enhanced their understanding of an appropriate tariff and collection system within the city.

During the contract preparation stage, there was no attempt to seek tenders to validate the proposal or to introduce other mechanisms that would enhance transparency and accountability or ensure the financial capability and soundness of the operator selected. Owing to the solicitous nature of the proposal (and the recommendation rendered by the US Embassy), the municipality did not conduct standard contracting procedures including financial checks and guarantees.

With respect to the contract, there was no consideration of a standard form of contract for PSP in municipal solid waste management (available through international agencies), no effort was made to contact other municipalities involved in such an initiative. Local legal counsel were consulted but unlike many PPP initiatives studied the municipality did not obtain consultancy support or legal advice was sought during the contract preparation (or any other) stage. The lack of preparation at an early stage is undoubtedly the root cause of the major problems which arose in relation to the fraudulent representative and thence the unsustainable nature of the current arrangement.

- *Subsidies for waste operations*

While a subsidy is specified under the contract agreement (NRs. 2.5 million annually for two years) the operator has not been able to obtain the full municipal subsidy intended to help cover their operating costs in the initial stages (to date the operator has only been paid 30%, ostensibly because collection services only cover 25% of the town. An obvious oversight is that the contract does not specify the terms and conditions upon which this subsidy will be released. Inadequate specification of these conditions has meant that the municipality has been able to withhold the full release of funds until the operator has reached all the target households. The private contractor meanwhile argues that that the subsidy is required as the means to extend the service.

- *Efficiency*

There appears to be a general consensus that, despite the constraints, the private operator has been able to perform more efficiently than the municipality. This can be attributed to more effective supervision of staff and operations, the flexibility possible outside the public sector and the labour relations prevailing in the private sector. Perhaps the most tangible and significant evidence of improved efficiency can be seen from a cost benefit analysis of the street cleaning operations before and after private sector involvement. The contractor undertakes street cleaning in the core city at 20% less cost than the municipality, at the same time the quality of service is reportedly higher and public satisfaction greater.

Efficiency has been significantly enhanced by delegating further responsibilities to the private operator. The viability of the door-to-door collection scheme has been greatly enhanced by the operator assuming responsibility for other waste activities. This has enabled some economies of scale but even more importantly has led to an integrated approach with one service (i.e. street sweeping) mutually supporting another (i.e. household collection).⁶³ The Mayor of Biratnagar suggests that further delegation is a more effective means to establish the financial viability and future sustainability of the partnership. To this end, he proposes to extend further municipal management contracts to the private operator for street sweeping, but sees this as a form of support which could take the place of the contractual obligation to pay the agreed subsidy. While the private operator would welcome additional contracts that intrinsically promote their household collection as well, they argue that the municipality has a contractual obligation to pay this subsidy and that they took over the Americorp activity on that basis. Failure to pay the subsidy is in their terms in breach of contract.

- *Lack of Capacity*

The Biratnagar case demonstrates that the capacity of both the municipality and the operator has been problematic. Neither the municipality nor the operator have had experience in managing an integrated solid waste management programme. Both parties have had to learn from experience and to experiment with systems and procedures. The main areas of capacity requirement have been concerned with contract formulation and negotiation, technical analysis of waste management operations, financial analysis and management, integrated waste management practices, public consultation processes, alternative waste management systems, role of NGOs and CBOs and community participation in waste operations. These issues are discussed in detail in the capacity section below.

- *Labour Issues*

In most Hindu parts of South Asia, waste workers are drawn from a socially and economically marginalised caste. In Biratnagar these castes form an identifiable part of the low-income community in the city. They live in an inadequate and insanitary environment and work for low wages with little or no job security in conditions harmful to their health. Typically, the solid waste sector absorbs some of the child labour in the city and Biratnagar is no exception.

Labour issues can be argued from diverse viewpoints. On the one hand it is possible to argue that the gradual shift to private sector operations taking place in Biratnagar does little to benefit workers and that it has not significantly improved the opportunities available to waste workers. For former municipal employees the operator is said to provide the same terms and conditions as the public sector (except workers are supervised and therefore do not work their 7 hours) but for the remainder of the work force, employment is provided on a temporary basis. Job insecurity therefore forms a key aspect of the workers' lives. Temporary workers interviewed report that they receive less pay than their colleagues on a permanent municipal arrangement,⁶⁴ and argue that conditions of work are better in the public sector.

From the operator's perspective, one of the primary operational issues concerns labour. The operator stressed that the lack of a work discipline and motivation creates

⁶³ Whilst integrating street sweeping with household collection may be good practice, it may be more problematic and less desirable to integrate collection and disposal in the activities of one operator.

⁶⁴ But this is the same wage received by for other private-sector sweepers in the city.

ongoing difficulties in achieving satisfactory performance. The operator argues that sweepers do not perform their duties properly, are not reliable and are frequently given supplementary informal payments to keep operations going. However, unlike the public sector which employs staff on a permanent basis (and the staff seconded to work for Americorp), temporary staff can be penalised by retrenchment and the operator has used this threat successfully to achieve better performance and changing attitudes. Both the private sector operator and municipal officers argue that casual labourers work more efficiently than permanent labourers who are more secure and complacent about work tasks and discipline.

The exact nature of employment conditions in relation to performance and to other sweepers was not possible within the scope of this study, however it was clear that the private operator employer has not brought any socio-economic benefit to these groups. However the flexibility within the private sector offers greater opportunity for improvement in terms and conditions than does the public sector. In this regard there are many lessons in South Asia for the operator to draw upon to improve incentives and work practices.⁶⁵

- *Scaling Up*

Despite the achievements of the arrangement, the Mayor of Biratnagar argues that the current scope and content of the partnership will be limited in the middle to long term. He argues that Americorp alone does not have the resources and technical capacity to undertake all the waste-related activities required by the city. The current Mayor, like his predecessor is ambitious and optimistic about the financial opportunities of the waste sector. He envisages a situation where waste is treated as a resource: *'waste will not be allowed to leave the municipal area, other waste will be imported and the income earning potential of waste as a commodity will be maximised'*. The Mayor's long term strategy is to develop a range of activities and involve a range of actors to address all aspects of solid waste management. By its nature, this would involve a more complex set of partnerships, rather than being reliant upon a single bi-lateral arrangement. These includes for instance:

- an emphasis on private service *providers appropriate to the task* (e.g. community based organisations for household collection and larger industrial enterprises for upstream recycling activities).
- an emphasis on *economies of scale*. (e.g. upstream activities such as recycling and disposal could cover 2-3 towns in order to achieve economies of scale.
- an emphasis on heavy waste such as iron, steel and other products which typically leave Biratnagar for use and recycling elsewhere.

However in relation to the existing service there is also some question over the capacity of the operator to replicate the initiative and significantly increase the scale of the operation. In particular, the makeshift and ad hoc nature of the operations (seen in the latest proposal for leasing a site for a compost plant) and the personal attention paid to each facet of the operation by the General Manager, suggests that significantly greater coverage and replication may not be sustainable without increased systematisation.

⁶⁵ In Ahmedabad in India, the Municipal Commissioner first took steps to improve the environmental conditions of the sweeper's own neighbourhoods, in order that they would have the incentive to carry out their tasks more effectively elsewhere.

6 Creating a pro-poor partnership

The contract arrangement in Biratnagar was not intended or structured to be an initiative that would directly or indirectly benefit the poor. For the past 3 years, implementation of the contract has not been concerned with solid waste collection in low-income settlements. In practice this means that the service and the arrangement does not include the larger slum areas but does tend to include smaller pockets of low-income household encroachments. Presently, these households dump their waste on the street and it is picked up through other street sweeping activities. To the extent that this dumped waste is collected, this means that the municipality subsidises the removal of the rubbish generated by the poor.⁶⁶ However there is also a view in Biratnagar that the poor do not generate significant waste, that they recycle and minimise waste as a survival mechanism. Despite this Americorp have recently initiated a number of activities directly with poor communities. Each of these activities is practical and achievable within the scope of the current contract arrangement.

The mobilisation of communities does not involve their active participation or decision-making (through, for example, community organisations taking responsibility for collection or directly contracting sweepers).

- *Communal collection proposals*

Community motivators (employed by Americorp) have been working in recent months on a proposal to initiate a household collection service in some poor communities. In principle, Americorp proposes to adapt the collection services provided in the middle income areas to enable low-income communities to benefit from their services and to enlarge their customer base. Communities will be able to buy into a 'communal centralised collection system' which will allow them to share buckets amongst 3 households and share the collection cost payable to Americorp. Buckets and collection will be offered at the standard price and tariff (NRs. 100 and NRs. 20/month respectively) but contracts will be taken out with community groups rather than individual households. Efforts have been initiated with NGO/CBOs to build mechanisms which would enable Americorp to provide solid waste collection services in poor areas. Although this is only at the proposal stage, discussions with 8 community groups in Biratnagar have taken place and 2 of these have proceeded into negotiations with local communities.

The operator foresees a number of problems with this proposal. First, Americorp is concerned that poor communities lack information and knowledge on the health and environmental hazards associated with waste. Second, they are not yet convinced of the willingness of the poor to pay for a rubbish collection service which they perceive to be non-essential. Third, the street sweeping service effectively serves those living on road encroachments. Finally, these attitudes are exacerbated by the more general issue discussed earlier that the people of Biratnagar have a strong sense that a garbage collection service should be a free governmental service.

- *Hygiene promotion*

Consequently one of the areas of activity Americorp have initiated recently is hygiene promotion. In order to develop a customer base amongst poor communities, they have undertaken 5 training workshops (utilising UNICEF materials) to mobilise NGOs to increase public awareness through hygiene promotion activities. It should be noted that this work is not paid, and does not form part of the contractual

⁶⁶ Unfortunately the low subscription level to the household collection services amongst the non-poor means that these households also benefit from the street sweeping service.

agreement with the municipality. While Americorp are in the best position to co-ordinate such activities and it meets with their own objectives, the municipality (through the RUPP programme) are aware that such initiatives need to converge with and mutually reinforce other poverty reduction and environmental improvement initiatives.

- *Recycling in government schools attended by children from poor families*

In order to include children and youth in the philosophy of reduce-reuse-recycle, Americorp have recently initiated an activity in 2 local government schools which enables children to learn about the importance of clean environments. It particularly focuses on waste-as-a-resource through specific, direct and rewarded recycling activities. In addition to art competitions and other awareness building activities, Americorp have recently initiated a paper recycling initiative. The school collects used paper and are then paid the equivalent of Rs 4 per kilo in notebooks and textbooks.

- *Briquette-making*

A second recycling-reuse proposal developed by the operator aims at converting household waste to fuel-briquettes. This activity has proven to be very popular amongst poor women accustomed to cooking with the fuels that cause smoke and respiratory problems. The fuel-bricks are cheaper than alternatives such as kerosene (at approx. NRs. 5 per hour burning operation) and remove some of the dirtiest waste. One hundred to two hundred women have become involved in this initiative.

- *The role of NGOs and the 'Clean Biratnagar' campaign*

Unlike many other solid waste initiatives in developing cities the partnership arrangement in Biratnagar has not involved community-based organisations or NGOs to any significant degree (either in community mobilisation or as micro-contractors). The lack of an experienced NGO sector in Biratnagar has meant that NGOs were not brought into the delivery of solid waste services at the outset or in the first years of the operation. Unlike NGOs found in many other contexts where there has been a focus on solid waste as a simple and visible NGO activity, there has been little solid waste activity and there is little familiarity or capacity for solid waste activity amongst civil society in Biratnagar.

More recently the local under-resourced NGOs in the city are gradually joining the operator's efforts. The key representative of Americorp reports that NGOs lack skills and knowledge, but are keen to participate in the environmental agenda. From the perspective of the private operator, the NGOs offer important entry points into communities. The 'Clean Biratnagar' initiative is thus envisaging and promoting NGOs as key actors. Americorp has begun to co-ordinate those NGOs involved through regular meetings and has initiated NGO capacity building in a variety of skills development efforts.⁶⁷ The intention is to support environmental activities with small amounts of funding or other support to promote NGO led activities which will improve the health and sanitation condition of local communities.

- *The role of the informal sector*

Americorp does not see the need or relevance of building links with the informal sector to carry out parts of the solid waste service. They argue that they employ

⁶⁷ The Clean Biratnagar Movement initiated by Americorp was inspired by the Clean Australia campaign and started on Cleanup the world day on Sept 17th 1999. The main objective of this initiative is to make people aware about the environment and to motivate people's participation in communal health & sanitation activities.

workers from the same caste and community as that which would undertake scavenging or sweeping informally, that the initiative is very new and is itself small scale and ad hoc, and there is no point to joining forces with the informal sector. In addition to this the employment of labour at extremely low rates means that there is little incentive to work with micro-enterprises. While this regular employment and the opportunity for scavenging from this employment may benefit some individuals, it is not known to what extent it has disadvantaged others. One of the outstanding issues to this case study remains the impact of operator's activities on ragpickers. While ragpicking still takes place, the collectors and sweepers themselves get first 'pick'. At the very least this means that these employed individuals have better access to the waste than the unemployed who may have relied on ragpicking for their sole income.

- *The role of women in the promotion of a cleaner environment*

Apart from these specific, yet small-scale, activities with poorer groups in Biratnagar, the work of Americorp has generally targeted women. The results reflect experience elsewhere in which women have been found to be effective managers of household and community waste. They report more sustainable and better cost recovery on household agreements when women are the signatories of the agreements. The Americorp community mobilisation initiatives for drawing in new customers, billing and collecting revenue all target the women in households and utilise women mobilisers and collectors.

Conclusion

While the operator is not skilled in working with the poor and the various dimensions of poverty reduction, it is noticeable that Americorp have developed small scale and ad hoc initiatives with the poor where they see the potential benefit to their operations. Be it in a small way, their ability to adopt new processes and involve new actors is a particular dimension of the way the initiative has developed. While it started as a high-technology, high investment partnership it now errs towards small pilots focused on small initiatives at the grass roots. The future challenge will be the scaling up of these initiatives.

The primary area of concern is the terms and conditions of the employment of (poor) individuals. While it may be argued that this is not worse than the municipal conditions and the public sector may have been uncompetitive, it is also notable that the private sector operation has not led to improved health and safety arrangements. In many solid waste one of the key benefits of the private sector is the ability to promote and sustain better work practices.

7 Capacity Constraints and Capacity Building

It is clear that the solid waste partnership between the municipality and Americorp has suffered from a lack of capacity in the field of PSP generally and waste management skills particularly. Unsurprisingly the knowledge base and competencies of both the municipality and the operator representative finally taking up the implementation process has developed over time. Both parties have learnt through on-the-job experience and consequently have experimented with different operational systems and processes. While the lack of financial resources has also effected the scope, nature and direction of the operation, neither partner has sought, or been the recipient of, specific training to enhance their capacity to maximise the opportunities of the partnership.

- *Understanding Municipal Solid Waste Management Systems*

It seems clear that the municipality did not have adequate knowledge of the technical aspects of solid waste management practice and was easily misled by the private party in the original contract negotiations as to what kind of waste service would be practical, cost effective and feasible in the context of Biratnagar. A different series of events would have undoubtedly taken place if the municipality had had access to better information and / or specialist advice before embarking on this partnership. During the implementation process, the lack of technical expertise within the municipality has been further exacerbated by the brain drain of good staff to Kathmandu.⁶⁸ The municipality only has one recent graduate engineer who is qualified as a civil engineer rather than environmental engineering and he spends less than 20% of his time on solid waste management.

There are many aspects of existing waste systems that need to be properly understood if a city such as Biratnagar is intending to introduce the concept of integrated waste management in partnership with the private sector. One of the primary information needs is to gain an understanding of the main stakeholders in the system and their relationships so that the objectives of policy reform can be made effective. Findings from elsewhere⁶⁹ have shown that it is important for a municipality to develop the capacity to understand that:

- Solid waste management is characterised by a web of activities based on people (stakeholders) rather than a hierarchy of waste management techniques. (It is not clear in Biratnagar if there was ever a sufficient understanding of this web of activities and the impact that the new 'integrated' waste system might have on pre-existing practices).
- Different stakeholders emphasise efficiency, environmental benefits and poverty reduction differently and supporting one objective may have consequences for the others that need to be accurately assessed.
- Key public-private linkages may already occur much nearer the waste generator than is often realised.

Training and capacity building for SWM management and supervisory staff needs to directly confront the need to change perspectives as well as introduce new skills. The Biratnagar partnership is the direct result of a contract negotiated in the absence of this kind of understanding and was thus based on unrealistic and inappropriate solutions to local waste management. While these have been modified to ensure some element of workability, action still appears dependent upon a single private organisation with insufficient links to other stakeholders.

- *Inadequate Policy Assessment*

An important area of capacity that has been lacking in the case of Biratnagar concerns the skills necessary for effective policy implementation. The successful introduction of policy change in solid waste management requires a careful appreciation of the interests of the actors that will be affected. A change at one end of the waste chain may have consequences for people far removed from it. Here it is crucial that policy makers and senior staff of the municipality have a knowledge of the likely impacts as this will help improve the design of implementation strategy. It is clear from the Biratnagar case that there was, from the outset, a lack of capacity to understand the need for and to assess the following critical policy issues:⁷⁰

⁶⁸ Senior staff are appointed through an national administrative service and can therefore be transferred or transfer from one municipal administration to another.

⁶⁹ Blore 1999

⁷⁰ Blore 1999

- *Willingness to Pay:* Willingness to pay (WTP) needs to be established in relation to different levels and type of service amongst different types of household and business. Once the existing WTP is known, willingness may be modified by targeted promotion activities. Willingness can also be assessed by the existence of private sweepers and the rates they command. Maintaining willingness to pay involves maintaining the quality or value added of the service for which customers are paying. In the context of SWM in Biratnagar willingness to pay must also be informed by a better understanding of ability to pay amongst poor households.
- *Source Separation, Reclamation and Trading:* It is important at the outset to assess the existing levels of source separation and reclaimed materials trading. This will be based on specific trading arrangements, volumes and types of traded materials and prevailing market rates. Investigations which include participatory discussions with primary stakeholders are needed at an early stage to prove or disprove assumptions. Many argue for instance that since those engaged in this trade are from poorer communities that markets are exploitative and that a new waste management system would help to minimise exploitation. However, whilst such markets tend to be complex and informal the trade may not be any more exploitative than other trades.
- *Supporting Policy and Attitudinal Change*

The kind of changes brought about in municipal service provision as a result of establishing a partnership initiative similar to that found in Biratnagar will typically start with, or result in, the increased commercialisation of service activities and changes in revenue collection practices. It is important that the municipal partner has the capacity to support and promote these changes to ensure wide acceptability amongst all citizens and user groups. This promotional and attitudinal change has to begin within the municipality itself. Although this may now be taking place in Biratnagar, it has been a slow process and an extended period has passed which has allowed defaulters to continue receiving the service without sanction. Most of these defaulters do not come from poor communities.

Amongst the poor communities, it is vital that any new arrangements for service provision and the imposition of charges be formulated through WTP surveys and through participatory processes in which poorer communities identify service delivery options and costs that meet their needs and that they find affordable. This may involve providing greater service differentiation and more varied options for charging and payment. One of the partners in the arrangement needs to be aware of and able to initiate this approach. In the context of Biratnagar it is likely that community organisation and poverty-related skills will be greater in the municipality than in the private operator. The potential and the experience of the RUPP in Biratnagar provides an important lesson that municipalities must develop the capacity to integrate various poverty reduction activities (of which solid waste collection is one) even if the actors in these initiatives are many and varied.

- *Financial Analysis and Planning*

It is clear that the partnership arrangement has suffered from the outset as a result of inadequate financial information. Contract formulation and negotiation has been undertaken without any proper unit costing of solid waste services. At present the municipal engineering department has estimates of cost by area but not by activity. The Municipality is however in the process of improving its financial management system and has embarked on a programme of computerised accounting. In so doing it is trying to introduce commercial or corporate accounting practices in place of straight

cash accounting. More efficient financial information system would undoubtedly assist the formulation and negotiation of any new partnership arrangements in future.

The municipality may then need to consider opening up the waste sector to a range of different contractors and inviting bids from the private and voluntary sectors. If this is to be the case the municipality will have to develop its capacity in the following areas in order to structure partnership arrangements in an optimal manner:

- application of methods to improve the determination of cost and assessment of benefits of alternative waste service options
 - formulation of a tender process for SWM contracts and an a fair and transparent system for the evaluation of bids with appropriate
 - guidelines on the application of a tariff system for household collection and procedures for periodic tariff adjustments
 - specification of subsidy/ contract management payments to private operators in line with an agreed schedule of costs
 - establishment of performance standards for the operation of specific waste services
 - evaluation and monitoring systems and procedures with reporting requirements
- *Technical Analysis*

A municipality requires technical skills to assess the viability of the PSP options. As already discussed above, the municipality in Biratnagar did not engage in sufficient technical analysis of the proposed scheme. Staff with capacity in alternative service options, technical performance standards and solid waste best practice, would have resulted in a more appropriate proposal at the outset and more informed choices throughout the implementation. The lack of these skills has resulted in an evolving service with variable standards of performance that are not related to technical compliance criteria or financial performance indicators in any systematic or transparent manner.

- *Revenue Support for Partnership Gestation*

A sound financial base at municipal level will greatly enhance the ability of a municipality to embark on PSP activity by providing greater autonomy over the levels of subsidy that might be required for initial investment and project start up. To some extent, the Biratnagar case illustrates a municipality with reasonable financial capacity. The municipality has provided a NRs. 1.5 million subsidy to the operations (although this is less than the NRs 5 million stipulated in the contract).

However many basic service partnerships are likely to require a reasonable project gestation period before the activity is able to become self-financing or to generate any significant revenue to offset costs. In similar contexts it is common to find public private partnership costs being subsidised by an external agency in the initial years. The Biratnagar partnership has received very little external financial support other than a small grant from FINIDA (organised by the operator) and has made no effort to access external support. It is not clear whether the municipality has not recognised this need, or not had the ability to access external agency support. An important skill needed within a municipality is to identify whether activities need short-term investment support and to know how to access appropriate funding mechanisms if they are needed.

- *Enhanced Capacity in Revenue Mobilisation*

Overall revenue collection within the municipality appears reasonable but the collection of some local taxes is less encouraging. The municipality appears to be running a balanced budget and is not facing any serious budgetary deficit. Given the fact that there will be a continuing requirement for municipal revenue support for waste management to cover the costs of street sweeping and the likely additional costs associated with disposal, it is important that the municipality develop its capacity in revenue mobilisation. Indeed elsewhere in South Asia efficient waste management services are closely related to efficient revenue mobilisation systems. The waste service efficiencies in Colombo Municipal Council for instance are directly associated with efficient revenue management systems particularly in relation to commercial property tax collection.

In Biratnagar it will be important for the municipality to realise the need for, and seek additional revenue and/ or revenue sources to finance MSWM on a sustainable basis. Moreover, as mentioned earlier, once the proposed landfill site becomes operational there will be a further requirement for subsidy support. In these circumstances it will be important for the municipality to develop capacity to strengthen revenue mobilisation, particularly in respect of property tax.⁷¹ This has the benefit of being a progressive charge with larger households paying more and the poorest households being excluded from the charge. However, the municipality will have to develop capacity to ensure all that properties are brought into the tax net and assessed periodically with an appropriate revision of rates (possibly in line with inflation). The municipality has recently initiated a preliminary cadastral survey and house numbering exercise as a first step in this direction.

It may also be desirable to strengthen other revenue sources so as to ensure a sustainable and viable waste management service. This could be done by improving the collection of professional tax, surcharges, application fees, property rental and parking fees. This would, in turn enable the municipality to provide a more sustainable level of support to future partnership activity in solid waste collection and disposal.

- *Enhanced Capacity in Expenditure Management*

Greater capacity in expenditure management could also provide additional revenue that could be utilised for the promotion of public private partnerships in general and the solid waste partnership in particular. Municipal administration costs have been increasing in recent years and it is estimated that they now exceed 40% of total income. There has been an increasing trend in expenditure regarding office supplies and fuel that may need to be more efficiently managed. As mentioned in relation to financial planning above, the municipality is currently attempting to improve expenditure management by introducing corporate accounting methods and at the same time computerising all accounting procedures.

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⁷¹ Bartone highlights that while the use of property tax is the most common means of cost recovery for MSWM, it is rarely efficient (Bartone 1999).

- *Capacity to support civil society involvement*

Neither the operator nor the municipality have sufficient skills to immediately and effectively draw in civil society to become a functioning partner. However, these skills are developing (a) through the RUPP cell of the municipality; and (b) through the day-to-day activities of the operator. Gradually the operator is recognising the important role that NGOs, despite their limited capacity, might play and that if NGOs are to be successfully incorporated into the partnership there needs to be sufficient capacity to understand their motives and negotiate their entry.

Particular areas where NGOs could assist the municipality and the operator include the development of a clearer understanding of reclamation rates, willingness to pay and enhancing workers social welfare so that they can promote socially oriented goals within the partnership.

- *Capacity to address strategic and practical issues concerning the poor*

The municipality itself has not explored the role of the poor in the solid waste arrangement with the private operator. Through the Rural Urban Partnership Programme (RUPP) there is however potential for the municipality to play a more deliberate role in creating a pro-poor arrangement and this is likely to supplement the operator's skills.

There are 2 levels of capacity in the municipal administration in Biratnagar. At the management level and in the mainstream departments the Biratnagar Sub Municipal Corporation is typical of many South Asian local administrations in its technical and bureaucratic approach to urban management. There was little sign at this level that poverty reduction strategies and methodologies had been embraced. However, through the efforts of the UNDP with the RUPP, a competent cell is developing in the municipality that works within a strategic framework for poverty reduction and appreciates the importance of developing practical mechanisms to work with the poor. Many of the structures and skills necessary for promoting a pro-poor arrangement exist in this cell. There is, at this level, an understanding of participatory processes, of the capacity of poor households and communities and of the key aspects of their livelihoods. With initial preparatory support and monitoring, the RUPP cell in the municipality would be able to support the implementation of an arrangement more inclusive of poor communities.

The key support needed by all parties will be the formulation of the strategy at the outset which addresses levels and forms of participation, service options, tariffs, payment mechanisms, monitoring etc. but also places these solid waste activities in the context of the broader poverty reduction programme. It was not clear that this strategic capacity exists in any of the stakeholder organisations in Biratnagar, nor was there awareness of this strategic skill gap.⁷²

- *Contract Management and Monitoring Capacity*

While the lack of understanding of performance criteria and effective forms of monitoring that performance may prove problematic in the future at present the main capacity gap is in the strategic management of the contract. The lack of sustainability and financial viability described elsewhere has not been taken on board and therefore not adequately addressed by the municipality. The inability to identify and allocate risks appropriately may ultimately lead to the partnership stalling. If the municipality

⁷² UNDP support and skilled specialists may provide the strategic assistance necessary.

in Biratnagar is to pursue PPPs in other sectors and indeed in the long term in solid waste management then they efforts will need to be made to build capacity in the area of strategic management such as risk allocation, contract negotiation and effective partnering.

Effective monitoring requires an understanding and definition of service standards expressed as outcomes, outputs or inputs (in terms of volume, time, cost or quality). While there is some understanding that this is required, no action has been taken to this end. The vehicle (the monthly meeting) is successful within the constraints of the contract (which lacks performance criteria) and the operator reports that the municipality does not micro-manage the activity or exert undue stipulation on the way the operator carries out its collection and street sweeping functions.

At the same time there needs to be an adequate mechanism for feedback from the customers and from the public. Neither the municipality nor the operator has established a formal complaints procedure. It would be useful and appropriate in the context of Biratnagar, for instance, to develop a modality for councillors to be more actively involved in the monitoring of the partnership operations at ward level. This would cover a range of customer complaints procedures for residents/customers in relation to labour operations and waste collection and disposal practices. To facilitate this, skills development in participatory and systematic monitoring and evaluation generally and in the degrees of technical compliance would enhance the municipal role in the short term. Attention also needs to be paid to any potential conflict of interest - the municipal monitoring role is problematic if the municipality continues as a profit-sharing partner in Americorp.

While careful attention needs to be paid to contract design, in the context of an existing contract, the skills development needed at this point is for effective contract management; and for contract renegotiation that brings about practical monitoring and enforcement, contract compliance, meaningful customer complaint and feedback mechanisms. At the same time strategic goals should be factored in to the decision-making process to ensure that municipal objectives are still being met, and to ensure that the operations are sustainable. At the least this means ensuring that the partnership provides the operator with adequate incentive, with area control and with the potential of service integration. Although the partnership in Biratnagar provides a contractor base and access to an integrated service due to the peculiar nature of the contract and the circumstances surrounding the launching of the venture it does not provide initial profit opportunities for the private party. The municipality has been slow to turn this around and establish a sustainable venture.

8 Lessons for other Municipalities

- *Sustainable contracts are reasonable contracts*

It is absolutely essential that a contract is sensible and reasonable for both parties. Municipalities need to be aware that favourable contracts aimed at enticing municipalities into partnerships have little long-term sustainability, and are unlikely to lead to benefits to the poor. Municipalities may benefit in the short term, but ultimately as an agency responsible for municipal service provision the municipality cannot be complicitous in unsustainable partnerships. Exploiting the private sector is not a means to improving service delivery.

- *Preparation is the key to an effective and sustainable contract*

Proper groundwork is essential before entering into contracts with the private sector. It may be important to engage the services of specialists to advise on contract preparation and formulation as well as to assist with any special feasibility studies. Analysis of institutional, financial and commercial options should accompany any technical assessments in the preparatory stage.

- *Transparency provides opportunity to check authenticity*

Municipalities should be wary of private sector solicitation and particularly proposals that suggest significant benefits but carry no risk. Competitive tendering, transparent procurement procedures etc. are all mechanisms that ensure the legitimacy and capability of a private operator.

- *Adequate financial provision needs to be made to cover high start-up costs*

The lesson from Biratnagar was that external financial assistance is needed in the initial stages of a partnership to support the shift to integrated solid waste management with cost recovery until acceptable levels of cost recovery are achieved.

- *Proper cost reporting is essential for sustainability*

It is important that the costs of private sector operations are accurately calculated and reported, and that anomalies which may effect the long term sustainability are understood by municipal managers.

- *Be wary of high technology proposals in low-income contexts*

One of the simple lessons of the Biratnagar case relates to the lack of viability of high technology proposals and high levels of investment in contexts with low GDP per capita and relatively low waste generation.

- *Project gestation periods are likely to extend over a lengthy period*

Municipalities should be aware of the lengthy gestation period of partnership arrangements. Time is needed for all stakeholders to come to terms with the way the partnership operates, where its benefits and problems lie and how these can be dealt with. In the solid waste sector, this is particularly relevant where attitudinal change is required to shift the views of the public.

- *Integrated waste management systems ensure better primary service operation*

A clear lesson that has emerged relates to the fact that the viability of the door-to-door collection scheme has been greatly enhanced by the partnership assuming responsibility for both downstream and upstream waste activities. This has enabled some economies of scale but even more importantly has led to an integrated approach with one service mutually supporting another. Municipalities and operators should consider options to promote efficiencies for the operator. Mutual benefits may accrue.

- *Division of responsibilities should be designed strategically to maximise efficiency*

Particular services should be linked to ensure efficiency gains (e.g. street sweeping and door-to-door collection) while other services might be de-linked to maximise the potential of various private sector actors, their skills and comparative advantage. The division of responsibility should be the result of an analytical investigation and a strategic action plan.

- *Labour issues*

Particularly in solid waste functions (which primarily employ from poor communities) the pro-poor objective includes ensuring fair/beneficial conditions for workers. A key to improving performance is the introduction of incentives, and while the private sector is more flexible in this regard, labour problems are not immediately resolved by transferring staff to the private sector.

- *Capacity building is necessary for all partners and customers*

Capacity building is necessary for councillors, municipal officials, private sector managers and employees, and civil society organisations so that all actors can play a role in the partnership. Municipalities need to ensure that a representative is able to act as liaison to the private operator. Public awareness campaigns and targeted community capacity building are necessary to develop better understanding of the implications of uncollected waste, the opportunities for improving environmental conditions and the need for appropriate cost recovery.

- *The franchise form of contract creates significant and structural difficulties*

It is difficult for the private sector to collect fees from the public directly for solid waste services, particularly when there is low willingness to pay and limited appreciation that solid waste collection and disposal is an important municipal function. Low cost recovery and small numbers of customers threaten the viability of private sector participation when this form of revenue collection is pursued. This function may be better placed with the municipality as they have the authority for more meaningful sanctions and thus the capacity to enhance the levels of revenue collection. Mechanisms need to be developed to ensure that the operator can work with the municipality to this end.

- *Enforcement mechanisms need to be in place to encourage user compliance*

It is vital that there is a means of addressing any wilful defaulters within the scheme. The introduction of a legally-binding contract to encourage regular payment, needs to be supported by the introduction of penalties and the enforcement of those penalties.

9 A Way Forward

In order to move forward into an effective and sustainable pro-poor partnership a number of strategic and practical changes are proposed. These changes reflect the lessons that have been learnt over the last 2 years, the changing needs of the municipality and the need to include the poor directly and strategically in the delivery of solid waste services in the city.

- *Improved Analysis*

The municipality needs to engage in more regular and thorough analysis of problems and services gaps encountered within the arrangement and take steps to revise problem areas. The municipality should investigate, through special studies, the key financial and institutional issues and develop institutional, commercial and financial options for further integrated solid waste management in the city. There is currently no clear idea of the real costs and likely returns, particularly with regard to a more integrated approach to municipal solid waste management. Decisions on involving the private sector can then be based on fact and not assumption.

- *Capacity Building*

If this process demonstrates the potential of private sector participation then there is a need to build capacity in both the private and public sectors. This capacity needs to ensure that skills and attitudes are developed and management structures and systems are enhanced to deliver pro-poor services. The municipal management needs first to develop more capacity in the potential of private sector participation and the capacity of the municipality to bring about effective partnerships. With regards to solid waste, municipal managers need to objectively identify skill gaps and then develop training initiatives and organisational mechanisms to fill these gaps. In Biratnagar there is a need for enhancing exposure to international best practice and to utilise international guidelines and capacity building materials.

- *Community level initiatives*

Mechanisms that *involve the poor* directly in the collection of solid waste at the tole (lane) level, should be explored. While improving environmental conditions, opportunities should be developed which draw on and contribute to the capacity of community level institutions. Mechanisms to develop a more significant convergence with the RUPP poverty programme could be developed. Options for collection, segregation, street sweeping in slum areas with the direct involvement of the poor through community groups could be explored. The private sector should be encouraged to co-ordinate more with CBOs and perhaps not providing the service itself in the slum areas.

- *Development of improved employment and work conditions*

The municipality and the private contractor should consider way and means of ensuring that while employment terms and conditions are structured to generate efficient service delivery they should also reflect, as far as possible, acceptable wages and conditions of employment for unskilled staff. Efforts to improve capacity through literacy training, leadership training and other skill improvements will create incentives as well as a more capable workforce. Incentives for sweepers and collectors can be established by improving the environmental conditions of their own neighbourhoods.

- *Position proposals within a strategic approach to waste*

The development of a strategic municipal solid waste plan would 'locate' the PPP and provide a basis for decision-making within the municipality. It may include, *inter alia*, some of the areas of development envisaged by the municipality, but these should be tested and analysed by specialists. [The municipality currently sees scope in (a) the development of partnerships with nearby municipalities to create economies of scale in disposal and recycling; and (b) ensuring that metal scrap materials and other valuable waste do not leave, and are recycled within the municipality.

- *Position proposals within a strategic approach to waste*

Improved exposure to successful municipal solid waste management elsewhere would be a useful tool to developing improved understanding of potential options and actions. In particular, the municipality needs to confirm that its ideas on making waste into a profit-making resource are realistic and achievable, by investigating solid waste experience elsewhere.

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Annex A Participants and Stakeholders consulted

Ramesh Chandra Paudel	Mayor, Biratnagar Sub Municipal Corporation
Bhu-Raj Raj	Deputy Mayor, Biratnagar Sub Municipal Corporation
Aaita Bahadur Rai	Ward Commissioner 19
Bharat Dahal	Ward Commissioner (selected)
Som Pd. Poudyal	Ward Commissioner 11
Muneshwor Yadav	Ward Commissioner 18
Gyan Bahadur Rai	ward member of ward 21
Laxmi Rai	Women's member of ward 19
Mohan Bahadur Karki	Engineer, Biratnagar Sub-Metropolitan Council, Chief of Solid Waste Management
Uttar Kumar Regmi	Planning and Technical Section Chief
Tara Nath Niraula	Food Adulteration Control Section Chief
Kul P. Niraula	Deputy Manager, SO Biratnagar/RUPP
Dilli Prasad Dhimal	Community Development staff - BMC
Kundan Upadhyaya	Youth Development Coordinator - BMC
Punam Kumar Dahal	Community Development staff - BMC
Dr B.P. Yedav	Health Coordinator, Plan International
Jigna Patel	US Peace Corps Volunteer in DWSS, Morang
B.R. Shrestha	General Manager, BMC – Americorp,
Janahi Dahal	Administration Manager, BMC – Americorp
Community organisers	Biratnagar Sub Municipal Corporation involved in assessment of poverty
K Kunwar	Managing Director, SILT Consultants
Rattan Kumar Siddhi	Coordinator, Private Sector Participation High Level Committee, Department of water Supply and Sewerage, Kathmandu
Amrit Rai	UDLE Nepal-German Cooperation Privatisation Expert to Kathmandu Metropolitan City
David Irwin	Privatisation Expert to Kathmandu Metropolitan City
Madan Manandhar	Director of Studies, Nepal Staff Administrative Staff College
Ramesh Munankami	UNDP / UNCHS Rural Urban Partnership Programme
Naoki Takyo	UNDP Programme Officer Private Sector Development

Annex B Characteristics of Poverty in Biratnagar

Simplified Disaggregation of Low Income Communities

	Very Poor	Middle Poor	Poor
Income	Ranges from 0 to NRs. 900	NRs. 1500-2000	NRs. 2000-3000
Possible Employment	Unemployed, irregular or seasonal employment, one wage earner <ul style="list-style-type: none"> Domestic staff, Child labour, destitutes, occasional labour 	Daily Wage employment, no security, one wage earner <ul style="list-style-type: none"> Sweepers (1800-2300), domestic staff, vendors, rickshaw pullers, labourers, bus conductors 	Semi-skilled but poorly paid, perhaps supplemented by part time work of second wage earner, one member regular secure employment <ul style="list-style-type: none"> Municipal sweepers, carpenter, masons, unskilled government workers (3000), factory workers.
Social circumstances	Extended families with up to 16-17 members Marginalised groups: Mushar, Muslims, tribal groups and Mehatar (sweepers) Girls marry 12-14 years	8-10 members in household Some marginalised groups especially tribal groups and scheduled castes Girls marry 12-15 years	7-8 members in household Less likely to be marginalised, can access assistance Girls marry 14-17 years
Food	1 meal per day rice/curry with green chilli (male) earner takes meal first	2 meals per day rice/dhall/curry with chilli women may miss meals to save	2 meals per day some chicken/mutton + rice/dhall curry or chapati all family members eat
Cooking fuel	Use animal stool and straw made locally (guintha)	Collect firewood, dry bushes etc	Collect firewood, dry leaves of sugarcane, bushes and so me have a kerosene stove.
Drink /Cigarettes (?)	Domestic alcohol Smoke local tobacco (chur)	Local alcohol bought occasionally (especially on pay day) NRs 8-10 per day or NRs. 200-250 per month. Smoke bidi NRs. 40-60 per month	Men drink regularly and spend HH income on local drink. Up to NRs. 350 per month. Smoke bidi regularly and occasionally tailor made cigarettes. NRs. 1100-120 per month
Clothing	Get clothes from other people and beg for cloth	Obtain second-hand clothes from bazar at special festivals	Obtain second-hand clothes for children to wear to school
Education	15% only go to school up to 5 th standard	35% boys and 25% girls go to school up to 5 th standard.	Both boys and girls go to school (approx. 50%) up to 5 th standard.
Health care	May go to govt. hospital Traditional medicines No support structures to rely on	May go to govt. hospital Can't afford /rarely buy medicines, rely on support structures	Govt. hospital /clinics Buy medicine, borrow if necessary, just manage
Credit/Debt	Cannot obtain loans, beg in an emergency	Borrow from neighbours in emergency	Borrow from local merchants at 36-60%

	Very Poor	Middle Poor	Poor
Housing	Homeless or very temporary shelter (hut made of bamboo, straw and plastic)	Temporary shelter	Semi-pucca dwelling of permanent materials
Tenure	No security as tenants or owners, encroach on government land	maybe tenants	May have some form of land title and security of tenure
Water	No access to potable water or walk 50m to communal supply.	Access via communal standpipe	Access via communal tubewell , some have own tubewell
Sanitation	No access to latrine, use road/river side etc	Access to communal latrine or use roadside, field	May share facilities (pit latrine and ring pan)
Lighting	Rely on street lighting at night and kerosene bottle lamp	Kerosene lamp	May have an illegal connection or simple globe and some form of connection line from neighbour.
Festivals and ceremonies	Can't afford ceremonies, beg at festivals	Some weddings held and attended, limited short term borrowing NRs 5000-7000	Borrow or save for ceremonies: NRs. 15,000 weddings NRs. 15,000 funerals NRs. 15,000 others

Existing Support Systems

	Very Poor	Middle Poor	Poor
Safety Nets	Only option is begging	Children work in middle class homes as domestics in order to establish a safety net during crisis.	Relatives, friends, can afford to borrow money from local merchants
Rural-Urban Links	May have lost links	Some will have links but relatives may be poor too	May still retain links, providing support in crisis and able to access food if necessary
Neighbours/ relatives	Generally lack relative support, but may get support from poor neighbours	Some support in crisis	Get support more easily but also give support to very poor
NGO / Government support / services	May not be aware of support available, may not be seen or heard / may be marginalised from support	May be marginalised if vulnerable group or may be able to access support on the heels of the better-off poor	Most likely to be heard and access the government / NGO support available

Household Expenditure Profile of Poor Households in Biratnagar

Analysing Expenditure and Incomes to consider affordability

* NRs. 70 = US\$1

	Indicative Expenditure per month	
	Description / Daily cost per item	Monthly cost in NRs.
Food	Rice: 3kg costs NRs.16 Dhall: 1 kg costs NRs.125 GRm: 1 kg costs NRs.36	900-1200
Rent	Average NRs. 200	200
Water	No payment for water. Free plastic containers used.	0
Sanitation	No payment	0
Solid Waste Collection	Mostly no payment, some proposing community collection	20 proposed only
Cooking Fuel	Collect firewood /straw Guintha some kerosene	0-20
Electricity / Lighting	Include costs of candles/ kerosene	50
Clothing	Include costs of clothes for school: 200 per annum	10-20
Transport	By foot or bicycle Do not use bus often	0-35
Education	Direct cost at admission time. Clothing and books are hidden costs; NRs. 450 per annum per child	0-75 (cost spread over year for 3 children)
Health Care	200 per illness for large families	200 approx. (cost spread over year based on 2 illness per person per year – min 7 in HH)
Alcohol and Cigarettes	Alcohol NRs. 200-350 /month Cigarettes NRs. 40-120/month	(0) 240-370 (some FFH may not have this expenditure)
Weddings Funerals Other obligations	5-15,000 for each girl (for 2 girls spread over 10 years) 1,000 funerals	Varies (not included in total, but adds to outgoings)
Total Monthly Expenditure	NRs.	11360-2190
	Indicative Income per month (NRs.)	
Total Monthly Income	Very poor 900 Middle Poor 1500-1800 Poor 2000-3000	900-3000

