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OUTPUT-BASED AID FOR SOLID WASTE MANAGEMENT IN NEPAL

RBF CASE STUDIES: A GPRBA RETROSPECTIVE



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Overview and Acknowledgments

This case study is part of a series prepared by the World Bank's Global Partnership for Results-Based Approaches (GPRBA). The objective is to highlight project components that have enabled GPRBA to successfully deploy results-based financing (RBF) approaches for the provision of basic services to low-income communities, with efficiency, transparency and accountability. The present analysis is focused on the Nepal Output-Based Aid Solid Waste Management (SWM) project. The objective of the project was to improve access to high quality and financially sustainable solid-waste management (SWM) services in selected secondary cities in Nepal. Institutional limitations and external factors, including the earthquake in Nepal as well as the country's fuel crisis, caused delays and implementation challenges. Despite these challenges the project produced satisfactory results. It was implemented over a period of four years, from June 2013 to June 2017, and benefited around 120,000 households across five municipalities in Nepal.

The findings for this study were primarily informed by project documents. Additionally, studies conducted by the World Bank and the Asian Development Bank were taken into consideration to provide an overview of the municipal SWM sector in Nepal.

The team acknowledges Charis Lypiridis and Ibrahim Ali Khan for their leadership in the production of this report, Jonas Ingemann Parby, Daniel Coila and Douglas Sumerfield for their valuable input, and Amsale Bumbaugh for her support during the production process.

Acronyms

3R	reduce, recycle, reuse
ADB	Asian Development Bank
ASM	Annual Subsidy Multiple
GoN	Government of Nepal
GPOBA	Global Partnership on Output-Based Aid
GPRBA	Global Partnership for Results-Based Approaches
IFVA	Independent Financial Verification Agent
ITVA	Independent Technical Verification Agent
LSGA	Local Self-Governance Act
MoUD	Ministry of Urban Development
OBA	output-based aid
RBF	results-based financing
SWM	solid waste management
SWM-SIP	solid waste management - service improvement plan
SWMTSC	Solid Waste Management Technical Support Centre
TDF	Town Development Fund
TLO	Tole Lane Organizations
TPIAs	Tripartite Implementation Agreements



Sector Context and Challenges

In 2014, Nepal was both the least urbanized country in South Asia – with only about 18 percent of its population living in urban areas – and the fastest-urbanizing country in the region, with an average urban population growth rate of 3 percent.¹ Since 1990, this rapid urbanization had coincided with increasing political instability due to the abolition of Nepal's monarchy, the ongoing attempts to frame a constitution, and a decade-long armed struggle from 1996 to 2006. Therefore, in 2014, due to its constant state of conflict and political transition, the World Bank included Nepal in the list of countries classified as fragile.²

This political uncertainty and rapid urbanization had put substantial pressure on the already strained governance structures within the country. Nepal continued to rank low on international governance indicators such as Transparency International's Corruption Perception Index (ranked 116 out of 177 countries) and the World Governance Indicators (declining trend over the last decade). Public Financial Management also remained a critical issue.³

Pertaining to institutional frameworks, several ambiguities in the roles and responsibilities between different tiers of government had contributed to unclear and somewhat weak local government bodies. Sometimes overlapping and superseding provisions produced ambiguous relationships that impacted accountability, participation, and transparency in public service delivery.⁴ In the context of local governance, accountability mechanisms for local bodies were not clearly defined by the Local Self-Governance Act (LSGA).⁵ Municipalities, though granted autonomy by the LSGA, continued to be administered by central civil service officers. These arrangements suffered from a weak management structure with limited delegation below the ministerial level and poor supervision.⁶

In terms of solid waste management (SWM), less than half of the 700,000 tons of waste generated in municipalities was collected each year.⁷ Aggravating the problem was the rampant open dumping on riversides and roadsides practiced by a significant proportion of municipalities, thereby contaminating soil and drinking water sources (both surface and groundwater). Furthermore, poor public awareness and inefficient collection led citizens to dispose of waste within their compound either by unscientific composting that emitted hazardous gases or by throwing the waste in the surrounding roadside drains, thereby clogging the drainage systems.⁸

Along with structural and technical challenges, one of the main factors preventing municipalities from effectively managing solid waste was their inability to charge residents for its collection. A sample survey of nine relatively large municipalities found that the SWM fees comprised only about 2 percent of the municipal own source revenue.⁹ Residents were unwilling to pay for SWM due to poor services and without increasing revenues from SWM services, municipalities were limited in their ability to finance higher-quality service provision.

¹ UN DESA, 2014

² Harmonized list of fragile situations FY14, World Bank

³ Country Partnership Strategy for Nepal, World Bank, 2014

⁴ Rai and Paudel, 2011

⁵ Adhikari, 2007

⁶ Nepal Critical Development Constraints, ADB 2009; Ottavia Cima, Helvetas, 2013; Suman Kharel, 2018;

⁷ OBA approaches, World Bank 2015

⁸ Solid Waste Management in Nepal, ADB, 2013

⁹ *ibid*



WORLD BANK INTERVENTIONS

Starting in 2009, the World Bank supported the Government of Nepal's (GoN) Urban Governance and Development Program: Emerging Towns Project (UGDP: ETP). The project's objective was to improve the capacity of the participating municipalities to plan, implement and fund urban development activities. It provided an opportunity to strengthen the World Bank's partnership with the GoN, demonstrate the implementation of the decentralization and urban development program, and further improve municipal infrastructure and basic urban services. During the project, the World Bank identified opportunities to assist fast-growing secondary cities. The activity comprising both infrastructure and institutional development could support the larger cities in their region.

Informed by the UGDP:ETP, the Global Partnerships for Results-Based Approaches (GPRBA) (formerly known as the Global Partnership on Output-Based Aid, GPOBA) decided to pilot a results-based financing (RBF) approach to address three interrelated barriers, including:

- (i) fiscal constraints that limit the level of services that municipalities can afford to finance;
- (ii) low willingness to pay amongst beneficiaries on account of low quality of service; and
- (iii) technical constraints relating to institutional capacity, less-than-efficient service delivery, and the general challenges of managing waste effectively.

The proposed project utilized an Output Based Aid (OBA) subsidy to address these barriers concurrently. A key chain of assumptions underpinning this proposal was that subsidies could increase service quality, which would affect willingness to pay and enable municipalities to gradually recover greater proportions of service delivery costs to sustain higher-quality services. The potential for the OBA project to have a long-term impact was significant, as it was anticipated that the project would have a demonstration effect for other sectors that suffer from similar challenges, including low coverage, poor quality of services and lack of financial sustainability.

Nepal OBA Solid Waste Management Project

INTRODUCTION

In 2013, GPRBA provided the GoN with a grant of US\$4,288,381 to expand SWM services. The grant aimed to improve access to high quality and financially sustainable waste management services in selected secondary cities. As previously noted, municipalities in Nepal struggled to provide access to higher quality SWM services due to their limited fiscal capacity and the resident's unwillingness to pay for waste collection services. All in all, an upfront funding gap effectively acted as a barrier to increasing service quality and increasing residents' willingness to pay, thereby preventing sustained access to high quality services.

The project had three components, including:

- (i) a service delivery subsidy to support gradual improvements in cost recovery in tandem with service quality improvements over a four-year period;

- (ii) technical assistance; and

- (iii) project management, monitoring, and verification activities.

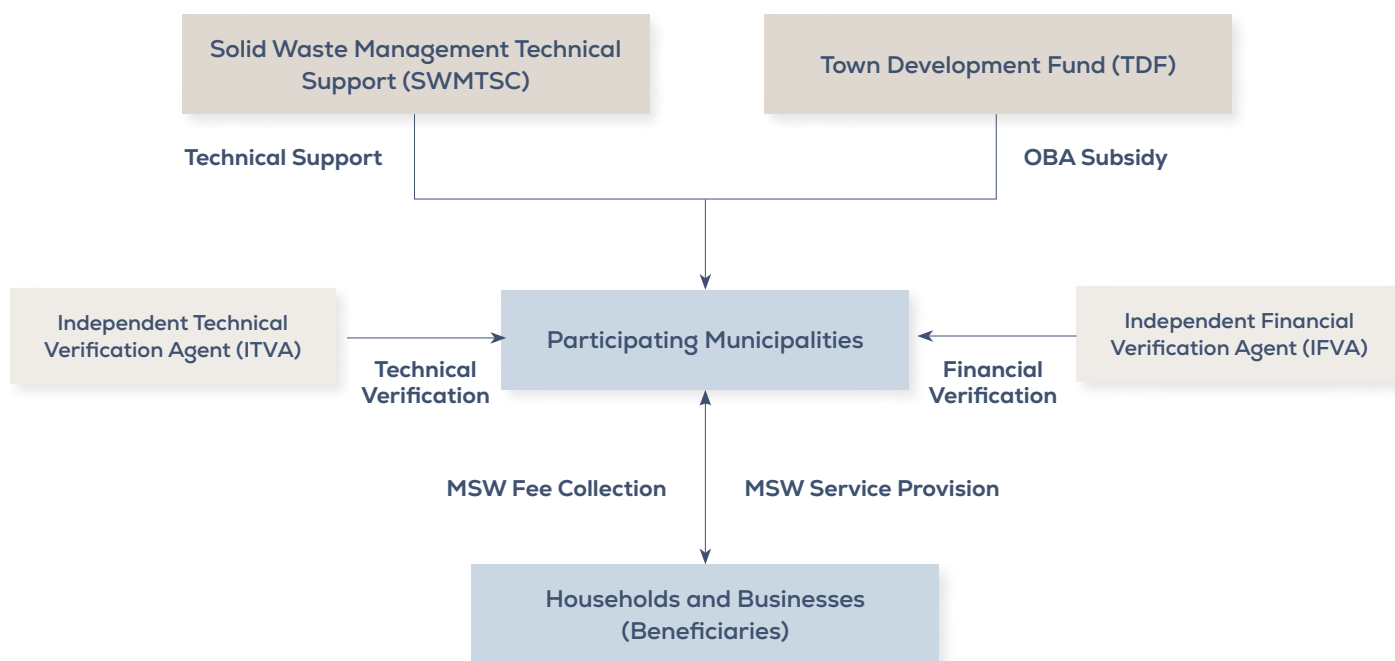
The project used an output-based service delivery subsidy to bridge the gap between the cost of delivering improved SWM services (capital costs, operations and maintenance costs, and other expenses) and the revenues that municipalities could collect for these services. The subsidy would enable municipalities to deliver improvements in service quality, in turn increasing their ability to collect gradually higher fees for SWM services. Implicit in the design was the assumption that with the improvement in quality of SWM services, residents' willingness to pay would grow.¹⁰ The municipal government's contributions towards services were expected to remain approximately constant in real terms with gradual increases in beneficiary revenue, replacing a diminishing subsidy to sustain high-quality service delivery post project completion.



¹⁰ A study by the Asian Development Bank (ADB) found that 82% of surveyed households were willing to pay an SWM fee if the level of service improved.

STAKEHOLDERS

Figure 1. Illustration of stakeholders



Government of Nepal

To increase the chances of sustainability and replication, the project was aligned to work with existing institutions and government systems, rather than creating new ones. In particular, two national government public entities played critical roles in project implementation:

- (i) The Town Development Fund (TDF) – a government-owned, semi-autonomous municipal finance institution acted as the Fiduciary Agent for the grant. Their primary responsibility was to handle the disbursement of OBA subsidies to the municipalities upon the independent verification of delivered outputs. Since the TDF had a prominent role in financing municipal infrastructure and services, institutionalizing the OBA model within TDF

presented prospects for replication of the model to other sectors (e.g., water supply) that are facing similar financial sustainability challenges.

- (ii) The Solid Waste Management Technical Support Centre (SWMTSC)¹¹ – SWMTSC was an autonomous corporate entity whose board was chaired by the Ministry of Urban Development (MoUD); it was the lead technical agency on SWM in Nepal, with a legal mandate to provide technical support to local municipal authorities on issues related to solid waste management. As the lead technical agency, its role in the project was consistent with this mandate of ensuring that participating municipalities had access to technical support on all aspects of municipal SWM.

¹¹ SWMTSC was subsequently dissolved by the Government of Nepal.

Independent Verification Agents

The project used a unique two-part verification mechanism through independent consultants. The first phase deployed an Independent Technical Verification Agent (ITVA) to review, on a quarterly basis, municipality performance against the technical and service delivery standards outlined in a predetermined technical scorecard. The scorecard was designed as a performance management tool and was central to the project's management and evaluation. Municipalities were eligible for the subsidies after receiving a minimum passing score. Implementing municipalities that failed to attain a passing score were allowed to revise practices and request re-scoring up to three times before exiting the project.

As part of the second phase, once services were deemed satisfactory by the ITVA, the Independent Financial Verification Agent (IFVA) was deployed. The IFVA was tasked with verifying the monthly beneficiary revenue collected, performing an independent calculation of the subsidy to be paid, and assessing the quality of the municipality's financial management system for SWM expenditures and revenues. Verification by the IFVA triggered the payment of the service delivery grant subsidies directly to the municipality's SWM account.

Municipalities

Participation in the project was determined through self-selection. Municipalities that fulfilled a set of basic eligibility criteria and were willing to address the fundamental challenges of parallel improvements in quality of SWM services and financial sustainability could participate in the project. Sub-metropolitan cities larger than 500,000 people were excluded from the project given that their specific SWM challenges were large enough to warrant their own individual projects. The key eligibility criteria of the municipalities participating in the project were:

- (i) access to an operational landfill;
- (ii) a functioning SWM system (collection and disposal);
- (iii) an existing or a politically approved system of collecting solid waste charges from beneficiaries¹²; and
- (iv) a commitment to preparing a SWM strategy, which included a short-term four-year action plan, referred to as the Solid Waste Management Service Improvement Plan (SWM-SIP), to improve the quality and financial sustainability of SWM operations over the project period.

Residents

Since more than 66 percent of household waste generated in Nepal was organic¹³, there was an excellent opportunity to promote the reuse of waste and significantly reduce the amount of trash handled at disposal sites. This required the residents to play an important operational role during project implementation. Therefore, the residents were well-guided and equipped by the municipality or community-based organizations to practice source segregation and composting of organic matter. They were also required to dispose of waste at the designated disposal points and ensure timely payment of the SWM fee to the municipality.

The objective of the SWM-SIP for a municipality was to support the improvement of the quality and financial sustainability of SWM services in the short term without significant investment in major infrastructure development (e.g., construction of new sanitary landfills). Its scope included a description and analysis of the existing SWM system in the municipality, as well as a detailed description of the short-term action plan, which outlined the actions/activities that the municipality would undertake to achieve the technical scorecard targets and improved cost recovery.

¹² Municipalities that had an approved strategy for collection of SWM charges approved by the municipal council but had not started the actual collection at the time of the first contact between the municipality and the project were eligible subject to actual collection starting no later than 6 months prior to effectiveness of any agreement for support under the OBA project.

¹³ Solid Waste Management in Nepal, ADB 2013

PROJECT FINANCING

GPRBA allocated US\$ 4,288,381 towards the project. A detailed breakdown of the planned expenditure is in the table below.

Table 1. Summary of Project Costs

Component	Amount
Service Delivery Subsidy	\$3,013,381
Implementation Support to Participating Municipalities	\$580,000
Project Management, Monitoring and Verification	\$695,000
Total	\$4,288,381

Although the project did not envisage major upfront investments, a framework to pre-finance expenditures was established. The Ministry of Finance (MoF) provided conditional grant advances to participating municipalities. The mechanism, described as an 'Advance Facility,' was managed by TDF and provided funds to the municipalities for expenditures they had to incur to trigger OBA disbursements. These funds were made available to the municipalities under the following terms:

- (i) OBA subsidies earned by a municipality would first refund any drawings from the Advance Facility; and
- (ii) MoF would reduce future unconditional grants to a municipality if the amount of OBA subsidy earned by the municipality was insufficient to refund drawings from the Advance Facility.





PROJECT DESIGN

A key component of the project design was to build upon the existing systems within municipalities for future sustainability. The planning and preparation phase required SWMTSC to first liaise with interested municipalities and guide them on the eligibility criteria of the project. After identification of eligible municipalities, SWMTSC was tasked with working with the municipalities to get the basic conditions in place for the signing of a Tripartite Implementation Agreement (TPIA). The TPIA, signed between the participating municipalities, SWMTSC and TDF described:

- the roles and responsibilities of TDF, SWMTSC and the participating municipality;
- the SWM-SIP;
- the procedures for OBA subsidy calculation and disbursement;
- the role of the ITVA and the IFVA in verification of outputs; and
- the required reporting arrangements by the participating municipality under the project.

Making the municipality a signatory in the agreement and formally committing to the SWM-SIP was a means to enhance their accountability and facilitate cooperation between all three parties. It provided the framework to grant discretion to municipalities over choosing their respective

service delivery models – guided by SWMTSC and within boundaries of technically, socially, and environmentally sound practices. The options of service delivery models available to municipalities included:

- ring-fenced municipal SWM department/unit;
- contracting with the private sector;
- contracting with NGOs and community-based organizations; and
- a combination of the above under a public-private-community partnership.

This flexible approach, which did not prescribe a single service delivery model, placed responsibility for efficient service delivery with the municipalities. It was expected to increase innovation in service delivery and foster local ownership.

TDF made disbursements directly to the municipalities after the two-phase verification of results and municipality performance. The first step performed by the ITVA used indicators that measured performance against the technical scorecard. The technical scorecard had four sections:

- (i) SWM strategy and action plan indicators that tracked the implementation of the SWM strategy and action plan for the municipality;
- (ii) performance monitoring system indicators that tracked the availability of a system to capture and report key operational data;
- (iii) service provision indicators that tracked the provision of collection and disposal services against defined targets; and
- (iv) financial performance indicators that tracked the developments in collection ratio, tariffs, and cost recovery.

Within this framework, the first two sections of the scorecard were prerequisites for successful implementation and monitoring of performance, while the latter two sections tracked actual performance. The intent was to encourage municipalities to first focus on instituting the basic requirements of the SWM system and then focus on actual performance.

If services proved satisfactory, the verification of municipal revenue, performed by the IFVA, activated the subsidy payment, less any advances drawn from TDF. The payment matched the SWM revenues collected according to an agreed multiplier – the 'Annual Subsidy Multiple (ASM)'. The ASM was a function of targeted levels of cost recovery and long-term municipal government contribution. This component shifted the performance risk to participating municipalities by disbursing the subsidy as a function of actual SWM revenues

collected (through gradually increasing SWM fees charged to all waste generators), if services met the verified quality criteria. The multiplier varied such that the subsidy grant phased out entirely after four years. If during any year a municipality was not able to earn the maximum subsidy for that year, either due to failure to pass the technical verification or inability to improve its SWM revenue collection performance, the balance of the maximum subsidy for that year carried over to the subsequent year.

Figure 2. Illustration of the verification process

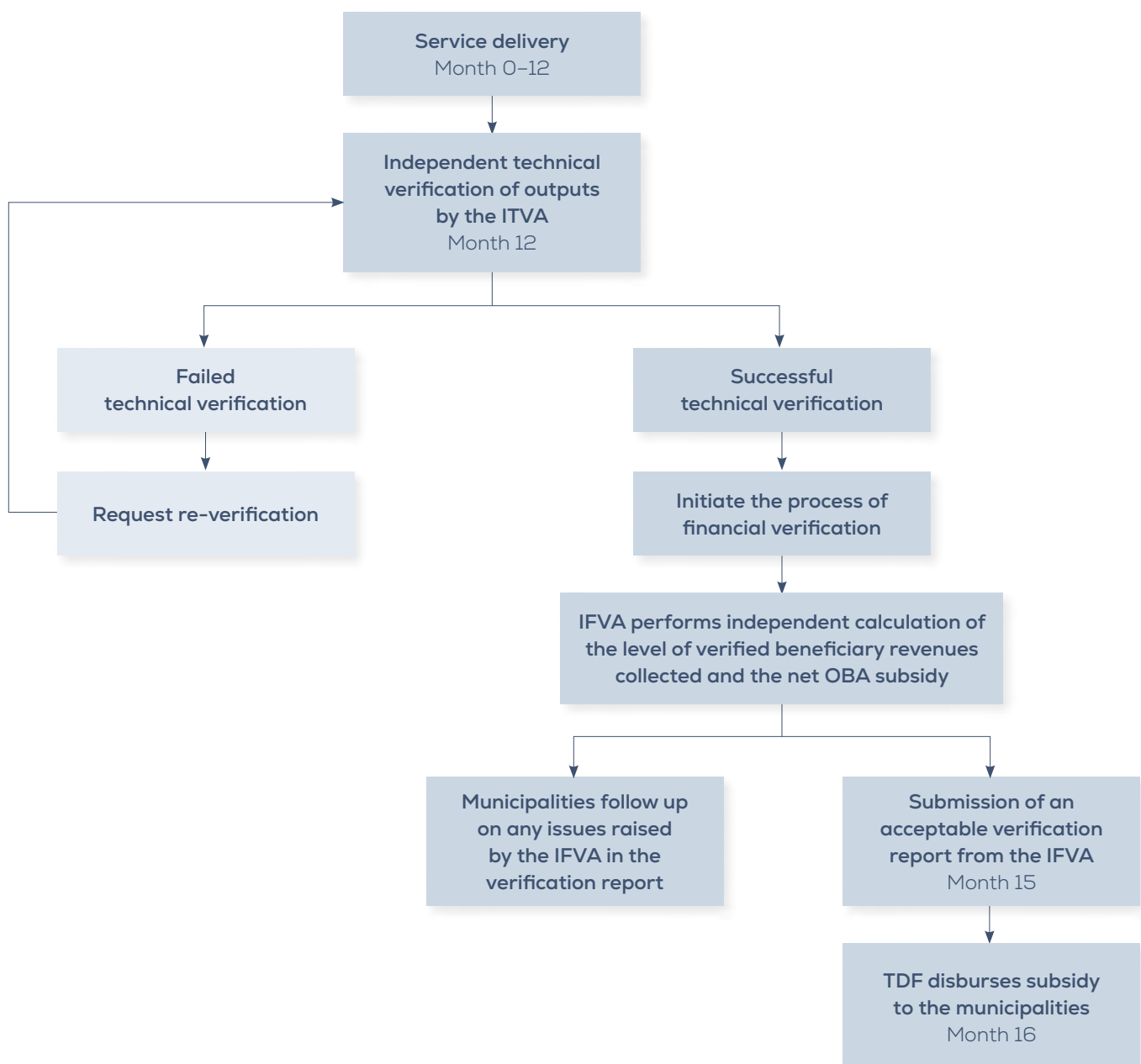
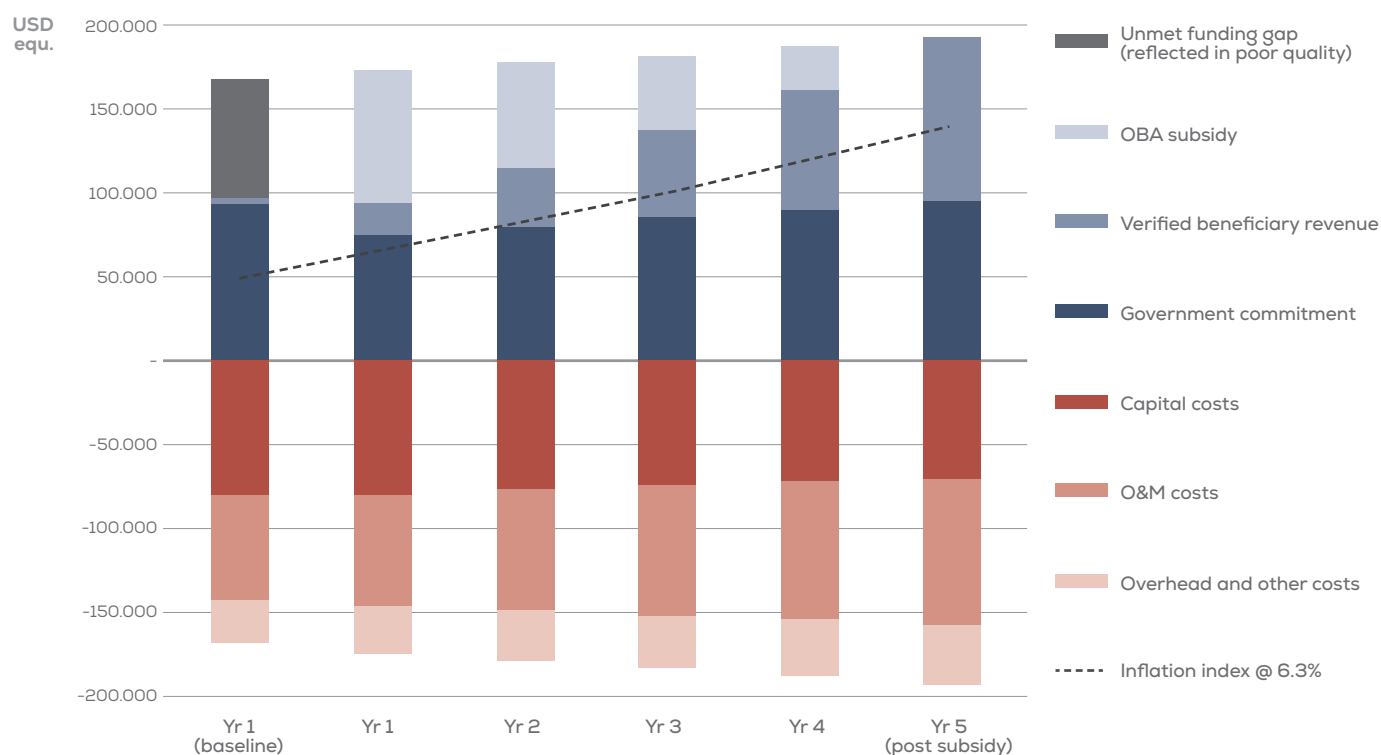


Figure 3. Illustration of the subsidy model



The project also laid out a capacity-building model to ensure the municipalities fulfilled their obligations. Through the Bank and SWMTSC, assistance was provided to municipalities for:

- preparing the SWM-SIPs and operational manuals for the disposal facility (if not already available);
- upgrading landfill operations and management expertise among key municipal officials designing, implementing the billing and revenue collection system;
- setting up a monitoring and performance management system; and
- designing appropriate contractual arrangements in cases where a municipality chooses delivery based on a Public-Private Partnership.

Lastly, to ensure that beneficiaries/residents understood the objectives and functioning of the system, municipalities received assistance on designing and implementing awareness campaigns targeting key stakeholders, which included waste producers (households and businesses) and Tole Lane Organizations (TLO). The campaigns were focused on encouraging 3R (reduce, recycle and reuse) activities, home composting and appropriate dumping practices, as well as ensuring timely payments of the SWM fees.

TLOs represent all households falling within their respective boundaries and function as a level of community government below municipalities. TLOs are active in many municipalities and are heavily involved in a range of activities including microfinance, small-scale infrastructure projects (wherein the TLO contributes cash/labor), and awareness generation activities.

PROJECT IMPLEMENTATION

The project was implemented in five municipalities: two small municipalities – Tansen and Dhankuta, one medium-size municipality – Ghorahi, and two sub-metropolitan cities – Pokhara and Lalitpur. SWMTSC facilitated a self-selection process based on the eligibility criteria, and five municipalities came forward to form the initial pipeline.

The implementation of the project was divided between two batches, with batch 1 comprising Tansen and Dhankuta and batch 2 comprising Ghorahi, Pokhara and Lalitpur. Tansen and Dhankuta were placed in batch 1 as they were already in the advanced stages of preparing their SWM-SIP with support from a SWMTSC project funded by UN-Habitat¹⁴.

Table 2. Population and number of households in selected municipalities¹⁵

Municipalities	Households	Total Population
Tansen	8,433	31,161
Dhankuta	7,220	28,364
Ghorahi	15,517	65,107
Pokhara	68,398	264,991
Lalitpur	54,748	226,728

There were, however, significant delays in project implementation for both batch 1 and batch 2 municipalities. These delays were attributed to the lack of administrative readiness of the municipalities to implement the project, as well as the overall weak administrative environment. The project was further hampered by external factors, including the April 2015 earthquake, which caused approximately 9,000 casualties, and the fuel shortage, which lasted from September 2015 to January 2016. Overall, the project implementation period for batch 1 and batch 2 municipalities was reduced to three years and two years, respectively (instead of four years for both).

The delays nonetheless led to a reevaluation of the design and address certain shortcomings. The ITVA indicated that the structure and narrative of the technical scorecard required simplifications. The technical scorecard required the ITVA to verify information that was not directly linked to or necessary for the achievement of the project

objective. Additionally, the scoring methodology included more items with binary (pass/fail) scoring subject to arbitrary assessment and fewer items with partial scoring to record incremental progress. The World Bank, TDF and SWMTSC accepted these recommendations and amended the technical scorecard accordingly. The simplified technical scorecard made the task of verification less complex for the ITVA and less onerous for municipalities. There was also a need to adjust the subsidy calculations and disbursement schedules for Pokhara, Lalitpur, and Ghorahi, to account for a shorter implementation period than the one envisaged in the initial project design and ensure maximum utilization of funds. The methodology for determining the subsidy due to participating municipalities had been developed on a four-year basis, while the agreement between the municipalities, SWMTSC and TDF for Pokhara, Lalitpur and Ghorahi were all signed in the first half of 2015; allowing approximately two years of implementation until the closing date of the project.

¹⁴ The Preparation of Solid Waste Management Strategic Plan and Action Plans for 15 municipalities' is an UN-Habitat funded project that is supporting the preparation of SWM strategic plans and action plans for 15 municipalities, including the municipalities of Tansen and Dhankuta.

¹⁵ National Population and Housing Census, 2011

Once project activities commenced, Tansen was the only municipality that failed the first technical verification. The municipality was unable to operationalize its landfill due to opposition from local residents. Fortunately, the project staff helped mitigate the issue by agreeing to the demands of the community regarding disposing only non-biodegradable waste. In reference to collection of fees, Dhankuta, Tansen, Lalitpur and Ghorahi tied tariffs to annual property taxes, whereas Pokhara collected monthly fees directly from the beneficiaries. Pokhara also utilized the technical support to formalize their previously informal private sector engagement.

The community awareness campaigns were successful in promoting the segregation of waste at source. Appropriate methods for waste segregation and collection were introduced in close consultation and collaboration with community-

based organizations. The campaign's impact was more pronounced in the smaller municipalities i.e. Dhankuta and Tansen, where residents were provided with vermin-compost bins and segregation bins. Many households were segregating biodegradable and non-biodegradable waste, allowing them to repurpose biodegradable waste as manure or cattle feed. There were also instances of women groups and TLOs setting up weekend markets to sell repurposed or recycled products.

Overall, the increased revenue enabled participating municipalities to develop efficient waste collection routes and provide waste collection services as per the predetermined collection schedule. It also enabled municipalities to innovate. Lalitpur municipality, for example, utilized Global Positioning Systems (GPS) mapping to designate their waste collection route.



PROJECT PERFORMANCE

The OBA subsidy successfully addressed the intrinsically linked challenges of improving service quality and increasing municipality revenues. The targets, time-bound implementation plan, and rigorous monitoring and evaluation mechanism gave a clear direction to the municipalities. By project completion, all participating municipalities had improved the quality of the SWM services.

Further, even though it was not an objective of the project, the participating municipalities were able to increase the coverage of households receiving waste collection services. All in all, approximately 120,000 households benefiting from the project. Furthermore, three years into the project, Dhankuta was named the 'cleanest city in the country' in an annual contest sponsored by SWMTSC.¹⁶

Table 3. Total Beneficiary Households

Municipality	Household served	Coverage
Dhankuta	6,000	67 percent
Tansen	3,500	58 percent
Lalitpur	52,300	83 percent
Pokhara	49,319	59 percent
Ghorahi	8,815	82 percent
Total	119,934	

Along with increasing their coverage, all municipalities could also gradually increase their fees. As shown in the table below, there was a considerable increase in the revenue generated across all municipalities. The improvement in

financial capacity was instrumental in supporting infrastructural improvements, purchasing machinery and developing the in-house capacity of the municipalities by setting up designated units with allocated staff.

Table 4. SWM Revenue collected by Municipalities¹⁷

Municipality	Baseline Revenue (Nepali Rupees)	Status during implementation (Nepali Rupees)
Dhankuta	0.6 million (FY 12/13)	1.43 million (FY 15/16)
Ghorahi	1.7 million (FY 13/14)	2.93 million (FY 15/16)
Tansen	0.3 million (FY 12/13)	1.15 million (7 Month collection during FY 16/17)
Lalitpur	2 million (FY 14/15)	7.59 million (FY 15/16)
Pokhara	14.9 million (FY 13/14)	8.77 million (7 month collection during FY 16/17)

¹⁶ Dhankuta Dazzles with Its Cleanliness Drive, World Bank feature story, November 2017 <https://www.worldbank.org/en/news/feature/2017/11/02/dhankuta-dazzles-with-its-cleanliness-drive>

¹⁷ Amount in this table has been provided in Nepali Rupees (NRs)

Smaller municipalities (Tansen and Dhankuta) had greater success in educating the public regarding key aspects of SWM and increasing their participation. Due to their size and longer implementation period, they could more effectively undertake capacity and awareness building activities and engage their residents, women groups and TLOs by introducing appropriate methods for 3R and waste segregation.

However, due to delays and the subsequent shortening of the implementation period, only 90 percent of the SWM service subsidy amount allocated for the project could be disbursed. The shortfall in dispersal was significantly higher for the project's implementation support and project management component. A detailed breakdown of the project disbursements is given in the table below.

Table 5. Component wise Project disbursements

Component	Allocated (USD)	Disbursed (USD)	Disbursement Rate
Service Delivery Subsidy	US\$ 3,013,381	US\$ 2,714,792	90%
Implementation Support to Participating Municipalities	US\$ 580,000	US\$ 240,873	42%
Project Management, Monitoring and Verification	US\$ 695,000	US\$ 308,950	44%
Sub-Total	US\$ 4,288,381	US\$ 3,264,616	76%

Challenges/Limitations

Weak decentralization efforts and inadequate empowerment of municipalities hampered project implementation. The foundational requirement to support effective project preparation and implementation, including strong ownership from the central government coupled with an empowered and stable municipal leadership, were missing. The governance structure remained highly centralized, and municipalities lacked a democratically elected leadership that was accountable to its residents. Further adding the challenges was the frequent transfer of municipal administrators, leading to a lack of clarity and consistency in administrative actions, hindered capacity building efforts, and poor institutional memory.

The insufficient technical capacity of the municipal staff strained operations. Despite the extensive technical assistance and capacity building activities, the staff at these municipalities lacked the requisite technical skills to operationalize key aspects of the project. Due to their lack of technical coordination capacity, simple data management

systems were hard to implement. As a result, municipalities could not adequately develop the ability to collect and manage data, especially data regarding the quantity and composition of waste collected. Collection and dissemination of such information would have assisted in developing future SWM plans.

The World Bank and SWMTSC had to deploy significant technical and financial resources for each municipality. The project framework included adequate flexibility to adapt to each municipality's capacity. Additionally, efforts were made to ensure that the action plans accounted for contextual factors and were aligned with the strategic needs of the city. Though these measures did improve service provision, the extensive deployment of resources required to achieve them raised concerns regarding the scaling up of similar interventions to a larger number of municipalities.

Identifying private sector solutions for small and medium sized municipalities remains a challenge. Since the private sector can deliver services effectively and efficiently, a common objective of

SWM projects is to encourage municipalities to facilitate service delivery without being directly engaged in service implementation. Even in the current project, there was an attempt to move away from the expectation that municipalities directly provide services. However, given the size of the cities, engaging the formal private sector in activities ranging from waste collection, resource recovery, and landfill operation was financially unsustainable. As small emerging cities, the private sector was primarily informal and comprised individuals or family enterprises that operated on a small scale with minimal capital input. Therefore, for projects implemented in similar-sized cities where the SWM sector is in its developing stages, efforts to privatize, considering these local contexts and technical limitations, should be conservative. There first needs to be a greater emphasis on formalizing the already

existing partnerships with the informal sector, laying the necessary steps towards transparency and accountability by institutionalizing private sector participation.

Enforcement of health and safety standards was lacking. Larger municipalities failed to ensure the use of safety gear for staff directly engaged in the collection and disposal of waste. The absence of protective equipment makes municipal workers vulnerable to injuries and diseases.¹⁸ Therefore, it is essential that every SWM project establish strict health and safety standards, including mandating protective/safety gear for all SWM workers. The measures should be complemented with extensive supervision and education of such workers to adhere to the established standards.



¹⁸ P. Thakur et al. 2018

Conclusion

Even within a challenging and fragile environment, the project yielded favorable results and achieved its objective. The robust framework, extensive technical assistance, and behavior change activities maximized the potential of the municipalities and their residents to improve SWM services and increase revenue collection. Additionally, the project was implemented at an opportune time. During implementation, Nepal introduced a new constitution¹⁹ that establishes a significantly expanded role for local bodies, including responsibility for delivering basic services and municipal infrastructure. Therefore, the project could inform the development of systems that lay the foundation for empowered and efficient local bodies. Furthermore, the institutional arrangements resulting from the project could influence the design of a national framework for managing improved SWM services. For instance, the technical criteria used in verification could support national efforts to benchmark, monitor and target future service delivery improvement. Similarly, the mechanism for setting subsidy amounts could develop into a mechanism for setting SWM fees in other municipalities. Continuing to build on these efforts, the World Bank, through the Nepal Urban Governance and Infrastructure Project (NUGIP), is seeking to operationalize the constitution by strengthening local governance systems and capacities for efficient service delivery in a decentralized set-up. In addition to this, the World Bank Group has continued engagement on the SWM sector through the delivery of diagnostic work, including Service Improvement Plans for Itahari municipality and Pokhara metropolitan city, as well as a SWM Policy Advisory Note.²⁰

The project created a replicable development-financing model for improving SWM services. It demonstrated that improving SWM services do not always require large-scale investment in

equipment or infrastructure. Projects can support available technical and human resources by utilizing simple, robust, and affordable designs that can be easily managed and maintained by existing staff. For instance, in the present project, the subsidy capitalized on existing infrastructure and ongoing plans that the municipalities had already set in motion to support SWM system improvement. Additionally, given the complex and evolving nature of developing countries, project designs should be subject to short-term periodic reviews to incorporate changes that may become necessary.

In a broader sense, the RBF approach developed for Nepal is a valuable tool in sectors like municipal SWM, which face budget constraints but also demonstrate an appetite for quality service provision. This approach ensures that funds are used efficiently and transparently to produce verified results. It also provides a framework for local governments to harmonize stakeholder interests (donor, service provider and beneficiaries) by developing consensus on defining and measuring government performance. Most importantly, RBF has the potential to address the shortfall in municipal budgets for waste services. It encourages the private sector by demonstrating a functional mechanism for cost recovery and flexibility to pursue a variety of contractual and financing arrangements. It also reduces risks through ensuring achievement of results before the dispersal of payments. However, it is important to note that RBF alone is not a panacea for the solid waste sector, and it is more efficient when associated with other instruments such as infrastructure investment, policy reform, and technical assistance.²¹ In this project, for example, supplementing the output-based subsidies with technical assistance and community outreach played an important factor in the project's success.

¹⁹ Constitution enacted in 2015 with implementation starting in 2017.

²⁰ [City-level Assessment and Draft Service Improvement Plan for Solid Waste Management, Pokhara Metropolitan City Assessment of SWM Services and Systems in Nepal, Policy Advisory Note](#)

²¹ Ibid

References

- Adhikari, D., 2007. Reengineering of local governance in the post-conflict situation in Nepal. *Contributions to Nepalese Studies* (Kirtipur), 34(2), pp.139-163.
- Asian Development Bank, 2013. Solid waste management in Nepal: Current status and policy recommendations. Asian Development Bank.
- Asian Development Bank. 2009. Nepal Critical Development Constraints. Asian Development Bank.
- Global Urban and D. R. M. Unit. Results-based Financing for Municipal solid Waste. Washington DC: World Bank.
- Rai, J.K. and Paudel, N.S., 2011. Discourses of local governance in Nepal: An analysis of legislation, constitutional processes and civil society demands. *Forest Action Discussion Paper Series*, 11(1).
- Thakur, P., Ganguly, R. and Dhulia, A., 2018. Occupational Health Hazard exposure among municipal solid waste workers in Himachal Pradesh, India. *Waste Management*, 78, pp.483-489.
- UN, D., 2015. World urbanization prospects: The 2014 revision. United Nations Department of Economics and Social Affairs, Population Division: New York, NY, USA, 41.
- World Bank. 2014. Nepal - Country partnership strategy for the period FY 2014-2018. Washington DC; World Bank Group.
- World Bank. 2015. Output-based aid for solid waste management: Nepal and the West Bank Output Based Approaches; note no. 46. Washington, D.C.: World Bank
- Ottavia Cima, Accountability at the Local Level in Fragile Contexts: Nepal Case Study
- IDS Working Paper 421, Institute of Development Studies in April 2013
- Kharel, S. (2018). Public service delivery of local government in Nepal in 2015. *Research Nepal Journal of Development Studies*, 1(1), 83-93.

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