



PROJECT COMMITMENT PAPER

Project Name	Output-Based Aid Pilot Solid Waste Management Project – West Bank
Sector	Solid Waste Management
Location	West Bank and Gaza
Task Team Leader	Ibrahim Dajani (WB) and Carrie Farley (IFC)
Funding Request	US\$8,556,623
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Acronyms

Acronym	Definition
ARAP	Abbreviated Resettlement Action Plan
ATP	Ability to pay
CBA	Cost Benefit Analysis
CPPR	Country Program Performance Review
DA	Designated Account
ESMP	Environmental and Social Management Plan
EQA	Environmental Quality Authority
ESIA	Environmental and Social Impact Assessment
EU	European Union
FM	Financial management
GDP	Gross Domestic Product
GPOBA	Global Partnership for Output Based Aid
IFC	International Finance Corporation
IFR	Interim Financial Report
IMF	International Monetary Fund
IVA	Independent Verification Agent
JSC- B	Joint Services Council of Bethlehem
JSC-H	Joint Services Council of Hebron
JSC-H&B	Joint Services Council of Hebron and Bethlehem
M/VC	Municipalities/Village Councils
MENA	Middle East and North Africa
MEnvA	Ministry of Environmental Affairs
MIS	Management Information System
MOF	Ministry of Finance
MOLG	Ministry of Local Government
MOP	Manual Of Procedures
NIS	New Israeli Shekel
OBA	Output-based aid
OM	Operations Manual
O&M	Operation & Maintenance
PA	Palestinian Authority
PCBS	Palestinian Central Bureau of Statistics
PoE	Panel of Experts
PLO	Palestinian Liberation Organization
PP	Procurement Plan
PPP	Public private partnership
SIP	Service Improvement Plan
SWBSWMP	Southern West Bank Solid Waste Management Project
SWM	Solid waste management
TFGWB	Trust Fund for Gaza and West Bank

TOR	Terms of reference
TOU	Technical Operations Unit
TPD	Tons per day
TPY	Tons per year
WTP	Willingness to pay
WB	World Bank
WB	West Bank
WBG	World Bank Group

EXECUTIVE SUMMARY

Background

Unsanitary waste collection and disposal in the Southern part of West Bank present serious public health and environmental hazards. Waste is mainly disposed of at unregulated dumpsites at the edge of towns and villages, and thus these hazards particularly impact the poor. Hebron and Bethlehem, the poorest governorates, generate around 20% of total West Bank waste. Although waste collection is high, service quality is low, and the system is inefficient.

The World Bank has successfully supported improvement of the solid waste sector in the Northern West Bank and is now supporting the Palestinian Authority through JSC-H&B (the joint council of municipalities in Hebron and Bethlehem).

Whereas, currently upstream (landfill) service improvement is underway, there are three interrelated barriers to improving access to adequate primary service collection (downstream): (i) fiscal constraints that limit the level of services that municipalities can afford to subsidize; (ii) low willingness to pay amongst beneficiaries on account of low quality of service; and (iii) technical and institutional capacity constraints leading to poor planning and high operation and maintenance (O&M) costs.

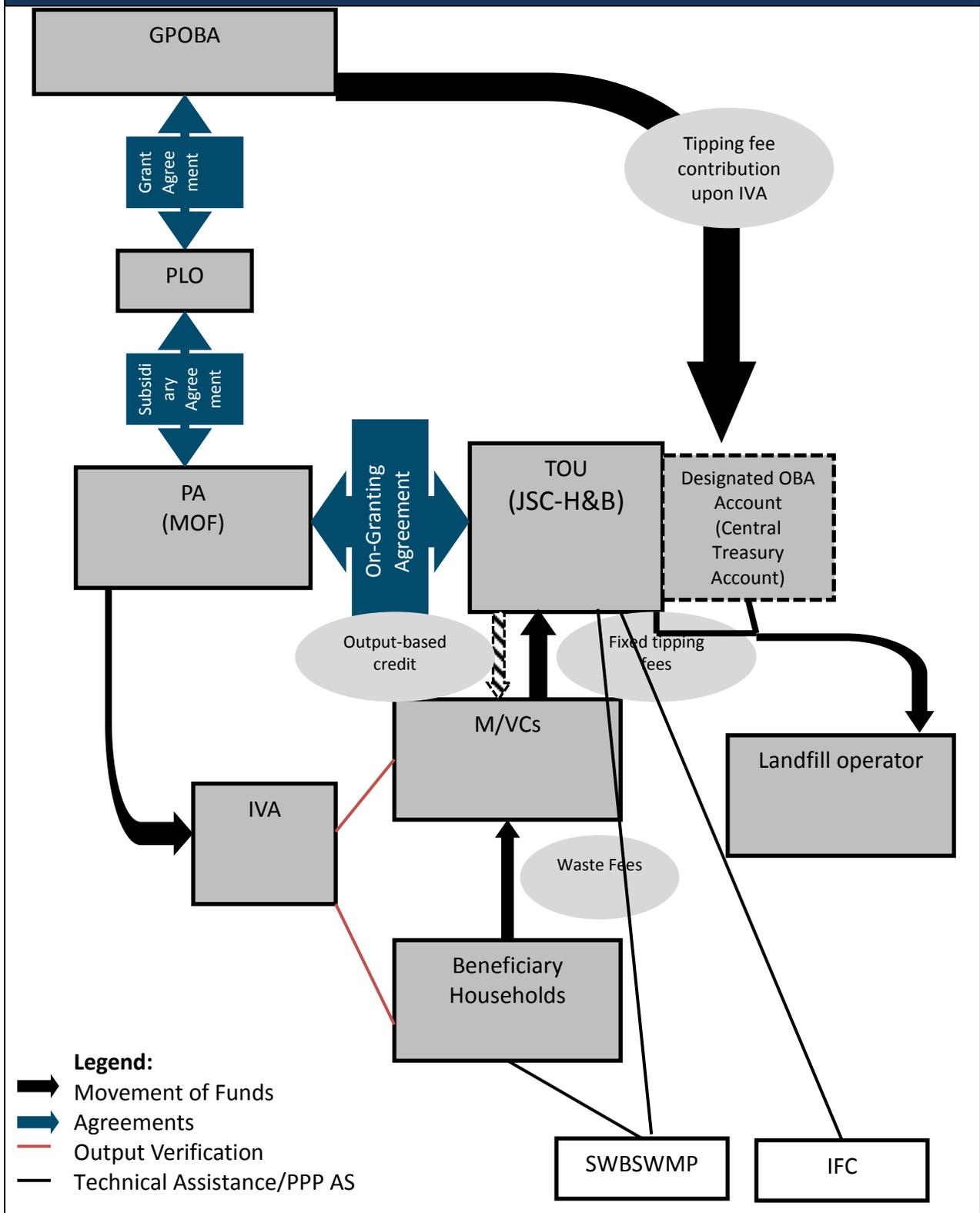
The Project

Based on the assumptions that households are willing to pay for increased services (as indicated in research), the Project will focus on improving of the quality of the downstream service levels (more and better collection) and enforce usage of a sanitary landfill. Thus, about 840,000, mainly poor, people in the service area will benefit from these improved solid waste management services. To reach the objective, the Project will utilize an OBA subsidy and address the above barriers concurrently. A critical chain of assumptions underpinning the Project is that subsidies can increase service quality which will affect willingness to pay and enable municipalities to gradually recover greater proportions of service delivery costs in order to sustain higher quality services.

Structure

The pilot is part of the larger Southern West Bank Solid Waste Management Project (SWBSWMP), following a similar project in the Northern West Bank. The SWBSWMP is implemented by the Palestinian Authority (PA) and the Joint Services Council of Hebron and Bethlehem (JSC-H&B), and supported by the World Bank (WB), the European Union (EU) and other donors. The International Finance Corporation (IFC) is supporting JSC-H&B through a public-private partnership (PPP) for the O&M of a new landfill in Al Minya and related facilities. See graph.

Figure 4 Project Implementation Arrangements



Subsidy mechanism

The OBA pilot will provide subsidies to enable households in the two target governorates to benefit from better quality, affordable, more efficient, and sustainable waste collection, transport, and safe disposal. The subsidy is limited to the estimated period (the first four years of landfill operation) when revenues from user fees are not enough to cover the increased costs of adequate service delivery.

The service providers (comprising Municipalities/Village Councils (M/VCs), the Joint Services Council of Hebron (JSC-H) and the Joint Services Council of Bethlehem (JSC-B)) will be reimbursed in the form of “output-based credit” to M/VCs upon the achievement of sustainable services delivered to households. Some of the M/VCs perform the collection service themselves while others do outsource it to the JSC-H and JSC-B.

The two outputs that, for each M/VC, will trigger the subsidy payment (or output-based credit transfer) are: access to improved service (OBA Target 1), and improved financial sustainability of the SWM system (OBA Target 2), which will be verified independently on an annual and semi-annual basis. The total amount of subsidy required to realize the OBA Targets over the four years is US\$8 million. Actual subsidy payment to M/VCs will depend on performance as will be recorded on a “technical scorecard” that comprise indicators for service quality and financial performance of SWM operations, and a weighting system. The subsidy will phase out as efficiency gains are made, and collection rates and tariffs increase.

In terms of implementing arrangements, GPOBA will disburse funds to the Palestinian Liberation Organization (PLO), the grant recipient, who will sign a Subsidiary Agreement to transfer the funds to the PA. The PA will in turn on-grant the funds to JSC-H&B, the project implementing agency. JSC-H&B will manage a special OBA account that will disburse the GPOBA funds solely for the purpose of paying the tipping fees due to the private operator (as per GPOBA requirement for the use of IFC funds in GPOBA), and credited back to the respective JSCs and M/VCs.

Technical Assistance

The target municipalities are determined to improve the environment and health of their citizens. To harness this ownership for SWM service delivery, the World Bank and IFC will provide parallel technical assistance to ensure the JSC-H&B and JSCs and M/VCs get the implementation support they need, namely: (i) develop and manage a Management Information System (MIS), (ii) develop guidelines for SWM tariff and fee collection mechanisms, and (iii) design and implement public awareness on the importance of sanitary SWM.

RESPONSES TO ISSUES RAISED BY THE PANEL AT ELIGIBILITY

Questions raised by the Panel	Responses
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<p>Analysis of consumer affordability of services being provided by the project and structure of subsidy payments.</p>	<ul style="list-style-type: none"> • Project preparation fieldwork gathered preliminary estimates on affordability levels and consumer characteristics, mainly through stakeholder interviews in a sample of nine localities in both urban and rural areas. This was combined with limited secondary source data available to develop an understanding of household demand, i.e. preferences, affordability constraints, willingness to pay. • Although no widely recognized standards exist on the proportion of household income that should be expended on SWM services, it is proposed that SWM costs in a low income country might consume two to three percent of income¹, which is in line with the estimates and projections presented here. • The Guidelines for SWM Tariff and Fee Collection Systems that will be developed is expected to complement these initial data through further primary data and analysis and, as appropriate, identify cross-subsidization mechanisms to alleviate burden on users with lower affordability levels. • Focus groups with residents during project preparation indicate that users are willing to pay for better quality service. Discussions identified specific areas of service improvement that are expected to improve user satisfaction and WTP, e.g. street cleanliness.
<p>Consideration of realistic objectives given the tight 4 year time frame</p>	<p>OBA Targets were designed to take into account the different approaches that will be necessary in different areas to achieve desired results in SWM service provision, based on consultations with JSC-H&B, JSCs, individual M/VCs and other stakeholders.</p>
<p>Role of JSC-H&B and municipalities in project implementation. How can adequate coordination with JSC-H&B and support to the municipalities during project implementation be ensured?</p>	<ul style="list-style-type: none"> • JSC-H&B has the legal mandate to address common SWM problems in Southern West Bank. • JSC-H&B will manage the performance of the M/VCs, JSC-H and JSC-B under the OBA pilot. It has already been playing this role through the development of the scheme, particularly through the organization of workshops with M/VCs (5 community meetings in Hebron and 4 in Bethlehem) to ensure that the scheme design is based on the challenges of the service providers and has M/VC support.
<p>JSC-H&B is funded from fees collected and receives other sources of revenue or support. How much do other sources represent and what should be the achievable targets to ensure the financial sustainability of the SWM system in the project area?</p>	<p>JSC-H&B's source of revenue include:</p> <ul style="list-style-type: none"> • Fees from M/VCs from solid waste fees collected from residential and commercial waste generators. • Fees collected by the Ministry of Transportation (for licenses, permits, road taxes, etc.). JSC-H&B can claim a portion of these funds allocated to individual M/VCs should individual M/VCs fail to pay their SWM fees to JSC-H&B.
<p>Fee collection target. Panel asked whether projections/calculations on expected fees have been developed. What recommendations can be made to ensure the set targets in terms of fee collection are</p>	<p>Project preparation fieldwork, combined with the IFC due diligence, provided a baseline analysis of the SWM system which enabled to identify achievable targets. Currently, average fee collection from M/VCs is 46% in both governorates, although with large variations across M/VCs. One of the underlying assumptions of this project is that increasing fee collection rates is possible by increasing user satisfaction and WTP through the provision of higher service quality. In addition, TA</p>

¹ Private Sector Participation in Municipal Solid waste Services in Developing Countries, UNDP/UNCHS/World Bank, Sandra Cointreau-Levine.

achievable?	will provide support to M/VCs to adopt the most efficient methods of fee collection adapted to their circumstances.
Waste reduction/recovery and safeguards. The Panel noted that landfills are not sustainable in the long run owing to shortages of land, and asked if the team considered other options such as recycling and composting, especially as 46% of the waste generated is organic.	Recycling and composting were thoroughly investigated as a part of IFC's due diligence. The cost to implement these activities given a commingled waste stream at the landfill is approximately 41NIS/ton including capital costs, operation and maintenance (O&M) costs and financing costs over 5 years. Based on a study of the market for recyclables and compost in the West Bank and Israel, revenues of approximately 19 NIS/ton could be generated. In addition, even though recycling and composting activities also add value in terms of extended lifespan of landfill, there is no immediate financial gain from this benefit, and JSC-H&B is not in a position to subsidize these activities. Moreover, large-scale composting activities will require additional land and permits. As a result large-scale recycling and composting has been excluded from the PPP project scope at this time.
<p>Condition for eligibility subject to:</p> <p>(i) Formal no-objection from the Country Director and the Sector Manager (due on 27 July), who have already provided written confirmation by email.</p> <p>(ii) Extension of the current Administration Agreement with the IFC which is valid until June 30, 2015, to cover the proposed project end-date of January 2017.</p>	<p>(i) Country Director (July 27, 2012), Sector Manager (August 13, 2012).</p> <p>(ii) Administrative Agreement between GPOBA and IFC was extended to December 2018.</p>

PROJECT COMMITMENT PAPER

Project Name: **Output-Based Aid (OBA) Pilot Solid West Management Project in West Bank**

Objective: To improve access to quality and financially sustainable SWM services in Hebron and Bethlehem governorates.

Total project costs: **US\$8,556,623**

Total GPOBA funding requested: **US\$8,556,623**

- Subsidy amount: US\$8,006,623
- Task Team Supervision Cost (including fees and travel costs): US\$300,000
- Independent Verification Agent (IVA): US\$250,000

GPOBA funding: International Finance Corporation (IFC) – 100%

Additional funding sources: In addition to GPOBA, funding sources include SWM fees charged to all waste generators, other municipal revenues, World Bank funds through the SWBSWMP and donor funds raised by IFC for technical assistance through the public-private partnership (PPP) project. Donor funds are also supporting acquisition of land and waste management assets.

Outputs (OBA Targets): 1) Access to improved primary collection services, and 2) Improved financial sustainability.

Beneficiaries: Approximately 840,000 people in Hebron and Bethlehem governorates.

GPOBA subsidy “efficiency”: US\$9.5/person (US\$10/person with supervision and IVA costs).

Targeting: Geographical. Bethlehem and Hebron fall in the poorer part of the West Bank with poverty estimated at 32.5% in Hebron, 21.3% in Bethlehem and 18.3% on average (2010), and unemployment rates of 22.8% and 22.4%, respectively, which are the highest unemployment rates in the West Bank.

Grant recipient: Palestinian Liberation Organization (PLO)

Implementing agency: Joint Services Council of Hebron and Bethlehem (JSC–H&B). Implementation and flow of funds arrangements have been reviewed and approved by the World Bank Financial Management Specialist.

Financial Management:

- FM has reviewed relevant FM sections of this commitment paper. A financial management capacity assessment for JSC–H&B was carried out in May 2008, as part of the appraisal of the ongoing Bank supported SWBSWMP, and was updated for this project. Overall financial management risk is “Substantial”. However, the implementation of the financial management arrangements and proposed risk mitigation measures (Annex 4) will satisfy OP/BP10.02 requirements.

- The same FM arrangements used for the SWBSWMP will apply. However, for the OBA project, GPOBA funds will be channeled through a “Designated OBA Account”, which will be opened by the MOF, under the Central Treasury Account at Bank of Palestine (Ramallah), and will be managed by the JSC-H&B Technical Operations Unit (TOU) upon independent verification. As per GPOBA requirement, funds provided by IFC should only be used to pay for services provided by a private sector party. Therefore, the OBA subsidy will be used only for the purpose of paying the private operator for operating and maintaining transfer stations, long haul waste transportation, and landfill operations.

Disbursement: OBA payments will be pre-financed by M/VCs through their own resources, and then reimbursed to JSC-H&B, upon independent annual and semi-annual verification. Direct payment method will be used to cover the costs of the independent verification agent (IVA).

Outputs verification: An IVA will be contracted, based on terms of reference (TOR) acceptable to WB to perform annual and semi-annual technical and financial verifications.

Procurement: Procurement will be carried out in accordance with the World Bank *Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers and Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers, Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants*, dated October 15, 2006 and updated in January 2011. AMS 15.01 “Policies and procedures for the selection and use of consultants by World Bank Group for operational work” will apply to Bank supervision activities.

Environment and Social: Clearance has been obtained by the World Bank and IFC Safeguards Regional Specialists, as regards compliance with the IFC Performance Standards 1-4 and Environmental, Health, and Safety Guidelines for Waste Management Facilities (Annex [6](#)).

Endorsement of OBA Project:

- JSC-H&B: Commitment letter received at eligibility stage
- JSC-H, JSC-B: Letters of participation to be provided as condition of grant effectiveness
- Participating M/VCs: Letters of participation to be provided as condition of grant effectiveness

Exchange Rate: NIS 3.75/USD

A. STRATEGIC CONTEXT AND RATIONALE

A1. Context and SWM Sector Issues in West Bank and Gaza

Economic context

The West Bank and Gaza have suffered many years of conflict and instability. Although annual Gross Domestic Product (GDP) growth has been consistently above 5% since 2007, reaching up to 9.3% in 2011, it has declined to 6.7% in the first six months of 2012, reflecting reduced donor aid and further restrictions on internal movement and exports² since 2011. The PA faces an increasingly difficult fiscal situation. In 2011, the PA was able to hold expenditures below budget, but revenues were lower than projected. As such, the recurrent deficit ended the year at about \$1.1 billion. Adding expenditures that the PA has made on development raised the PA's total need to about \$1.5 billion.

Solid waste sector

The population of the West Bank is estimated at 2.5 million. It generates around 1.2 million tons of solid waste per year (TPY) in 2010. In Hebron and Bethlehem governorates, over 98% of waste is collected, with the remaining portion either burnt or illegally dumped on open land. The waste load is primarily of domestic origin. The estimated annual waste generated is about 660 tons per day (TPD), corresponding to an average municipal waste load of 0.7 kg/capita/day in Hebron and 0.8 kg/capita/day in Bethlehem (associated with the impact of tourism). Waste composition consists of 46% organic, 9% paper and cardboard, 18% plastic, 2% glass, 1% metals and 24% other materials. The extent and composition of hazardous waste generated in the West Bank is not known; however, industries expected to produce hazardous waste are concentrated in the Hebron industrial area, and currently produce only 20 TPD of industrial waste.

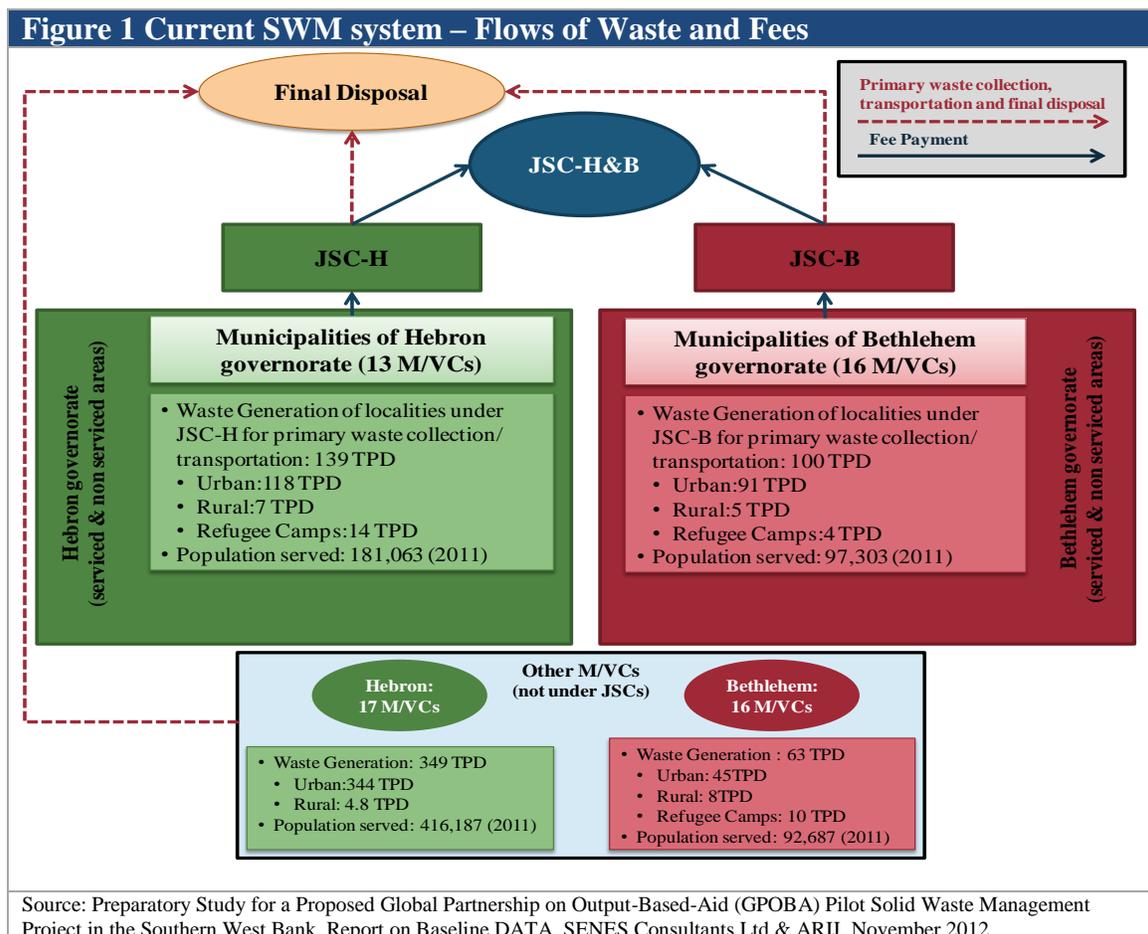
Hebron and Bethlehem, the poorest governorates in the West Bank generate 20% of total West Bank waste. Although waste collection is high, service is of poor quality and unreliable, and the system is inefficient. Primary collection is unsanitary and suffers from poor planning, high operation and maintenance costs, and inadequate equipment. Waste is mainly disposed of at unregulated local dumpsites at the edge of towns and villages, and burning of waste is a concern in some rural localities. Overall, the system suffers from deficiencies, in particular inadequate service planning, insufficient distribution of waste disposal bins, and inefficient routing of collection vehicles, resulting in poor quality of service. This situation directly affects residents, presenting serious public health and environmental hazards, particularly for the poor.

The sector is regulated by the MoLG, and by the Ministry of Environmental Affairs (MEnvA). However, MoLG and MEnvA are still developing their capacity. The implementation of SWM services is largely devolved to municipalities. Similarly, municipalities have serious capacity constraints, although improvements have begun through the establishment of two JSCs in the Southern area (JSC-H and JSC-

² IMF: Recent Experience and Prospects of the Economy of the West Bank and Gaza, Staff Report Prepared for the Meeting of the Ad Hoc Liaison Committee, September 2012. Palestinian Central Bureau of Statistics (PCBS).

B) that have the responsibility for providing a consolidated SWM service provision. M/VCs can choose to join their respective JSC and receive JSC-provided SWM services in exchange for a fee. Primary collection is thus provided either by JSC-H or JSC-B on behalf of their member M/VCs, or directly by the M/VCs as follows (see Figure 1):

1. M/VCs that are part of JSCs for primary waste collection and/or transportation
 - 8 M/VCs (including refugee camps) completely and 5 municipalities partially are covered by JSC-H, representing ~29% of the total population of Hebron governorate.
 - 16 M/VC (including one of the refugee camps) are provided service by JSC-B, representing ~53% of the total population of Bethlehem governorate;
 - These M/VCs in both governorates pay fees to JSC-H and JSC-B, which in turn transfer the revenues collected to JSC-H&B.
2. M/VCs in both governorates that are responsible for their own primary waste collection and/or transportation.
 - These M/VCs pay directly fees to JSC-H&B as they use facilities managed by JSC-H&B for final disposal (17 in Hebron and 16 in Bethlehem).
3. Smaller rural areas that do not have organized SWM services:
 - 27 in Hebron governorate representing ~2% of waste generated in Hebron.
 - 6 in Bethlehem governorate representing ~1% of waste generated in Bethlehem.



JSC-H&B oversees final disposal at Yatta dumpsite. The JSC-H&B is a legal entity that was established through a decision by the MoLG on July 12, 2007, and operates in accordance with the operating guidelines and bylaws of Joint Service Councils. It was created as an umbrella organization for the municipalities to address common SWM issues in Southern West Bank. JSC-H&B's board is comprised of four members from JSC-H's board of directors, three members from JSC-B's board of directors, other municipal JSCs and individual M/VCs. JSC-H&B has the right to: a) Charge for services provided; b) employ individuals; c) enter into contracts; d) develop plans to oversee waste collection and transfer; e) establish and oversee the O&M of the sanitary landfill and transfer stations; and f) charge fees for the use of these facilities.

Southern West Bank Solid Waste Management Project

The WB has been providing support to the West Bank SWM sector since 2000. The first intervention was in the Jenin governorate with the construction of the Zahrat Al Finjan Landfill, which began operations in 2007. Following the successful Northern West Bank solid waste management project, the WB, in collaboration with the EU and other donors, is supporting the PA and JSC-H&B through the SWBSWMP.

The SWBSWMP has two components. The first component is led by the WB and leverages donor support with the objective of providing efficient, socially acceptable, and environmentally friendly SWM services through: (i) strengthening the JSC-H&B and MEnvA administrative and technical capacity; and (ii) the provision of a sanitary landfill in Al Minya. The second component is private sector participation in: (i) the operation and maintenance of the planned Al Minya Landfill and two transfer stations; (ii) the transport service between each transfer station and the Al Minya Landfill; and, if feasible, (iii) the implementation of small-scale recycling activities. A preferred structure is expected to be approved by the JSC-H&B board in February 2013, after which a tender process will begin to select a private operator.

The PPP project excludes primary collection as this responsibility is devolved to M/VCs and the JSCs. In addition, the complexity of current service provision would represent a considerable risk to a private operator. Large-scale recycling and composting activities were thoroughly investigated as a part of IFC's due diligence and have been excluded from the PPP project scope at this time. Informal market sounding indicated that five years is the minimum acceptable term to allow sufficient return on costs associated with establishing operations. As regards future capital needs, analysis indicated that the start of construction for the remainder of landfill cells could be necessary as early as year 6. In light of the complications associated with such capital expenditures occurring within the contract period, a five year contract was selected.³

A2. Rationale for GPOBA Involvement

While the SWBSWMP and the PPP are addressing SWM services downstream, the GPOBA project focuses on upstream user service. Users are currently dissatisfied with services, notably, as revealed in focus groups conducted during project preparation, the low level of cleanliness of the urban environment. This dissatisfaction in turn limits WTP which affects the financial sustainability of the entire SWM

³ In the case where the private operator is able to delay the need for such capital investments (e.g. through waste minimization activities) an extension of contract is considered.

system. In order to arrest this vicious cycle, quality SWM services must be provided first, incurring both upfront and operating expenditures. Capex for service improvement are limited to items such as the design and implementation of a MIS, and the procurement of additional waste disposal bins. Opex will include additional costs incurred as the existing unsanitary dumpsites (Yatta, Al ‘Eizariya and random sites) are closed, and the new landfill and transfer stations, once constructed, are operated. This will incur higher final disposal fees to M/VCs and JSCs exacerbating household financial burden, and fiscal challenges. A key added value of the temporary OBA subsidies will be to help improve service delivery for poor households by (i) mitigating the fee burdens during the transition period required to achieve desired levels of service, and (ii) incentivize increasing collection rates. The Project’s approach in these two key areas is as follows:

- (i) Fee increase and affordability of waste fees. Efficient use of OBA subsidies requires thorough understanding of household ability and willingness to pay for services. As per the cost model, the end-user tariff is expected to increase by 50% during the OBA project (from 12.6 to 18.0 NIS/hh). Although no recognized standard exists, the literature proposes that total SWM costs in a low income country might consume 2-3% of individual income⁴. As poor areas of the Southern West Bank may be considered comparable to low-income countries, this threshold was used in project design. Data on household income was obtained through questionnaires administered during stakeholder meetings in nine rural and urban localities in both governorates. Table 1 provides a summary of the data collected during this exercise.

Table 1: Affordability for waste fee

Area	% of HH Income Current Fee Level ⁵ NIS ~13/month	% of HH Income NIS 18/month
Hebron (Urban): Yatta, Hebron 1 and Hebron 2	0.8	1.1
Hebron (Rural): Dura Countryside and Yatta countryside	2.9	4.0
Bethlehem (Urban): Al Ubediya and Bethlehem	1.2	1.6
Bethlehem (Rural): Artas and Battir	1.5	2.1

The above data provides the best available knowledge on affordability/WTP levels for SW in the poorer parts of West Bank. This information has been taken into consideration in defining tariff and subsidy level for the Project. However, it is important to recognize that localities display large variations in terms of socio-economic status. Also, while most users spend less than the 2-3% upper bound, the above data also highlights potential affordability barriers in some rural localities that will be further investigated in developing the Guidelines for SWM Tariff and Fee

⁴ Private Sector Participation in Municipal Solid Waste Services in Developing Countries, UNDP/UNCHS/World Bank, Sandra Cointreau-Levine, 1995.

⁵ Weighted average based on number of households.

Collection Systems. This further analysis will then be used to identify possible cross-subsidization mechanisms (e.g. between high waste generators, i.e. commercial establishments and households) that may be needed to alleviate burden on users with lower affordability.

(ii) Increased fee collection. The existing billing and collection system, especially in small municipalities is a primary challenge in achieving greater cost recovery. Hence improving collection is fundamentally important for the financial viability of sustaining services in all communities. Fee collection currently averages 46%⁶. Higher collection rates will be encouraged through the proposed performance regime, where the subsidy will only be disbursed when a certain level of performance has been attained, meeting two indicators: (i) improved fee collection ratio (Indicator (4)), and (ii) improved billings to cost ratio (Indicator (5)). M/VCs will have a choice regarding how they organize their billing and collection mechanisms, provided that fees for SWM services are: (i) clearly set and transparent; and (ii) measurable for the purposes of financial verification. It is recognized, nevertheless, that billing and collection are a primary risk to the Project's success. Most notably, the affordability of SWM service fees (as discussed above) has a strong linkage with overall collection efficiency – i.e. fewer paying customers places additional burden on those who pay. Thus a key outcome will be minimizing tariff increases by maximizing the number of paying customers. In addition, the focus group meetings undertaken indicated an increased WTP if service levels improve. Building on these findings, the Project will benefit from campaigns financed by WB and IFC to raise awareness on the need to pay for SWM services and to keep the city clean. Awareness raising will be critical to sensitize citizens on the need to pay for SWM services as better service is available. Over time, a larger portion of operational costs would be financed through user fees, as users receive improved services and therefore become more willing to pay. This will strengthen M/VCs' ability to commit resources after the project end to cover the costs needed going forward, without compromising other municipal resources and services. In the interim period, the OBA subsidy will ensure that M/VCs are able to implement service improvement without tapping other municipal funds.

B. PROJECT DESCRIPTION

B1. Project Development Objective

The objective of the GPOBA pilot is to improve access to quality and financially sustainable SWM services for users in the poorer part of Southern West Bank.

B2. Key Indicators

A performance regime supporting the achievement of pre-set indicators for improved services and financial sustainability will be periodically verified by an IVA through a scorecard system (Annex 6), triggering OBA subsidy disbursement. The performance regime was developed such that reaching minimum targets will demonstrate success in achieving the project development objective. Field work

⁶ Fee collection rate is higher when there enforcement by municipalities' staff is strictly applied, or in M/VCs with robust collection mechanisms such as prepaid electricity meters with built-in SWM fees. However, the use of pre-paid electricity meters can only be applied in potentially 36% of households in Southern West Bank as tying SWM fees to pre-prepaid electricity meters is only possible where electricity services are provided by the M/VCs, as private utilities are reluctant to incorporate SWM fees in their bills. Alternative approaches to improving fee collection are being studied, such as requesting a demonstration of waste bill payment before residents can acquire needed permits.

conducted during preparation enabled the identification of the issues that are key to improve the SWM system. The two project outputs and their related indicators are described below.

OBA Target 1: Access to Improved Services. This output measures access to improved SWM services. The feedback from end-users received during preparation indicated dissatisfaction with the service provided, primarily due to low levels of cleanliness of streets. This can result from a number of causes such as inadequate number and distribution of communal bins, insufficient frequency of waste collection and even lack of awareness of existing collection timetables, among others. While cleanliness captures the various characteristics of effective primary collection service, it does not address the overarching goal of SWM, which is to ensure the overall handling of waste such that the environment is preserved for all residents. Al Minya landfill is being developed to provide the Southern West Bank with the infrastructure necessary to enable environmentally sound waste disposal; however, to ensure these benefits are received by users, it is important that waste is also managed sanitarily. Hence, two tangible and immediately measurable indicators, “Cleanliness of areas” and “Total waste managed”, are proposed, capturing the spectrum of improved service provided to households:

- **Indicator (2) Cleanliness:** this will be measured by using a Cleanliness Index (CI), further described in Annex 9, which will serve as a proxy for the appropriateness of primary collection service⁷. The CI is a measure that is based on visual inspection of areas, and assigns grades/scores based on the observed cleanliness characteristics, for example a grade of “A” or 3 points is assigned for areas where there is no visible refuse on the streets. The CI has been used in a number of countries such as the United States, Spain and the United Kingdom. Targets for this indicator seek to increase the CI score, demonstrating an improvement in the cleanliness of streets.
- **Indicator (3) Total Waste Managed:** This indicator gauges the percentage of the waste produced that is being treated in a sanitary manner. The indicator will monitor three waste streams, the first two of which would be counted as waste being treated sanitarily: waste deposited at the sanitary landfill (Al Minya landfill) and waste diverted from Al Minya landfill through recycling or reuse. The third waste stream measures waste that is not sanitarily treated which is waste deposited at other dumpsites (i.e. Al ‘Eizariya, Yatta and random dumpsites). While the WB SWBSWMP requires the closure of currently existing dumpsites, this indicator provides further incentive for service providers to ensure all waste is captured and handled sanitarily, and that new unsanitary dumpsites do not arise in the future.

OBA Target 2: Improved Financial Sustainability. The second output is meant to address the deficiencies in the financial situation of SWM. Financial performance is a function of two things, the cost of the service that is being provided and the revenues that are generated to cover this cost, the latter of which can be further broken down into, who is billed, the amounts they are billed and how much of what is billed is collected. Out of these different components, the level of fee collection by M/VCs requires the most attention given current collection rates. As a result, fee collection is separated as its own indicator in

⁷ It is recommended that a study be undertaken by JSC-H&B in Year 1 to: delineate the specific cleanliness challenges faced in all areas of the Southern West Bank; determine specific actions that need to be taken to address the challenges for each M/VC; and formulate improvement plans to include both awareness building campaigns and infrastructure provision. This data will establish the baseline scores for each M/VC in the MIS being designed to monitor performance.

order to ensure the focus of M/VCs. The other elements listed above are not issues in all M/VCs and are therefore not targeted separately but included in a single indicator measuring cost recovery. Specifically, the two indicators are defined as follows.

- **Indicator (4) Improvement in Fee Collection Ratio:** Currently, percentage fee collection from end users is low in both governorates, approximately 46% across the system. As such targets will be set to increase percentage fee collection to a level that will enable sustainability. This will be measured as fees collected divided by billings.
- **Indicator (5) Improvement in Billings to Cost Ratio:** based on fieldwork and data collected, there is room to benefit from efficiency gains in provision of SWM services in Bethlehem governorate, increased registered users that are billed in Hebron Governorate and some increase in tariffs in both governorates. The single indicator that will measure these elements will be measured as Total Billings/Total Operating Costs and will therefore, not overlap with the fee collection indicator defined above.

Additional elements are deemed important to achieve the above indicators and manage the GPOBA reporting and monitoring regime. These elements have been captured in “Indicator (1) Strategy Development/MIS Implementation”. Indicator (1) includes the following studies and actions to be implemented in the first year:

- **Indicator (1) SWM Strategy:**
 - **Strategy Development:** this entails development of plans for management and treatment of slaughterhouse and medical waste and the development of plans for closure and rehabilitation of unsanitary dumpsites⁸.
 - **Implementation of the MIS:** the design and implementation of the MIS is targeted for the first year. Relevant SWM data such as waste tonnage handled, costs, etc., is currently tracked by service providers; however, the MIS will facilitate the consolidation and reporting of this data and allow JSC-H&B to more effectively track progress and performance.

B3. Project Design

Targeting

In the absence of data on household income, the Project uses geographical targeting at the level of the governorates where poverty level is estimated at 18.3% on average, 32.5% in Hebron and 21.3% in Bethlehem (2010)⁹. Both governorates also have the highest unemployment rates in the West Bank with averages of 22.8% and 22.4%, respectively¹⁰. The vulnerability of these groups is exacerbated by mobility restrictions and poor market access.

Output-based subsidy payment

⁸ These closures are part of the World Bank project and including them in the OBA targets will further incentivize JSC-H&B to achieve closures according to the planned schedule. In addition, these closures are necessary to meet OBA targets for Indicator (3) Waste Managed.

⁹ PCBS: West Bank Southern Governorates Statistical Yearbook, 2011

¹⁰ PCSBS Press Release on Labour Force Survey Results, Labour Force Survey (January-March, 2011) Round (Q1/2011).

The project is structured as a framework that could later form the basis for continuous sector improvement. The framework will enable JSC-H&B to monitor and evaluate progress towards agreed targets for improved service quality and financial sustainability. Technical scorecards will be used by the IVA to assess M/VC and JSC performance. Based on the results, JSC-H&B will determine the OBA subsidy that each M/VC and JSC can claim in the form of an “output-based credit”, and which will be transferred according to a schedule to be determined in the Project’s Operations Manual. This credit will be applied against the M/VCs and JSCs final disposal bills. Should M/VCs and JSCs fall short of their targets, but still demonstrate progress; JSC-H&B will provide a portion of the output-based credit. Participating M/VCs and JSCs that fail to meet targets for two consecutive evaluation periods in absence of extenuating circumstances deemed acceptable by JSC-H&B may be excluded from the scheme in order not to penalize M/VCs who have achieved their targets.

GPOBA will disburse funds to JSC-H&B based on achievement of the OBA Targets by municipalities. The design of the “staged” approach whereby the service providers (municipalities) will be granted the subsidy as a credit on their landfill gate disposal bill, is justified in order to comply with GPOBA’s requirement that **funds provided by IFC can be used solely for the purpose of paying the private operator**, who in this case, is providing final disposal services on behalf of JSC-H&B.

The cost model provides the total estimated subsidy available in each year of the project (Table 2). The amount to be paid for the achievement of each indicator is derived from the annual subsidy amount and weights for each indicator in a particular year.

Table 2 Annual Subsidy Disbursements

Period/Disbursement date	Amount US\$
Year 1 (1/2): January 2014-July 2014 (1st disbursement January 2014, 2 nd disbursement July 2014)	2,576,291
Year 2: August 2014-July 2015 (3 rd disbursement January 2015, 4 th disbursement July 2015)	2,222,600
Year 3: August 2015-July 2016 (5 th disbursement January 2016, 6 th disbursement July 2016)	1,793,642
Year 4: August 2016-July 2017 (7 th disbursement January 2017, 8 th disbursement July 2017)	1,414,090
Total	8,006,623

Technical scorecard

A technical scorecard has been designed in order to determine subsidy allocation and track progress against OBA Targets. The technical scorecard contains the indicators (and their weight) to be evaluated in each verification period, namely:

- Indicators related to SWM strategy development and implementation of MIS
- Indicators related to service provision (Cleanliness Index and Total Waste Managed)
- Indicators related to financial performance to track cost recovery progress

Target values for the indicators were developed based on baseline conditions collected during project preparation at JSC-H&B, JSC-H and JSC-B level, based on their understanding of the different challenges facing different M/VCs.

Each indicator is described below:

- *Indicator (1) SWM Strategy:* the required plans such as plans for environmental best practices regarding slaughterhouse and medical waste, and preparation for the MIS will be conducted by JSC-H&B in the initial 6 month period of the project, with the MIS being fully deployed and implementation of the aforementioned plans commencing by the end of the first year. It is expected that best practices will be fully adopted and implemented as of year three of the project.
- *Indicator (2) Cleanliness:* a number of studies will be conducted in the first year of the project to establish the appropriate base upon which to build progress towards this indicator. Studies on routing optimization and bin evaluation (number, location, etc) will be conducted in the first year, in addition to geo-referencing studies of streets to help calibrate the CI for each area. Full implementation of the recommendations is expected to be achieved by the third year. Furthermore, a number of stakeholder awareness activities will be developed in the first year and implemented throughout the project period, with the majority of such activities happening in the initial 2 years. This will help build awareness and achieve higher levels of commitment to behavioral change among stakeholders, to help achieve the targets identified.
- *Indicator (3) Total Waste Managed:* the abovementioned stakeholder awareness activities in addition to the studies mentioned under Indicator (1), will also help ensure that progressively a larger portion of waste is managed in a sanitary manner.
- *Indicator (4) Improvement in Fee Collection Ratio:* the development and deployment of the MIS will help keep track of fee collections and highlight areas for improvement which will enable the relevant agency to focus its efforts on such areas. Furthermore, the development and implementation of Guidelines for SWM Tariff and Fee Collection Systems in the initial years will help ensure the most appropriate billing mechanisms are utilized in each governorate.
- *Indicator (5) Improvement in Billings to Cost Ratio:* once more, the actions taken in initial years will help with the achievement of targets for this indicator. Optimization of routing, for example, can help reduce operating costs, whereas the Guidelines for SWM Tariff and Fee Collection Systems can help set tariffs at appropriate levels and the MIS will be instrumental to tracking progress. Altogether, this would help with the progression towards the goals that are set.

Weights for each indicator in each year were determined based on the relative importance of that indicator in the respective period. For example, the MIS needs to be developed in Year 1 as it is integral to the M&E of other indicators. As the focus during the first year is to ensure the said prerequisites are in place, whereas the focus in the remaining years is on the actual performance towards the service provision and financial performance targets of the OBA intervention, the MIS-related indicator is assigned a 50%

weight in the first year. Furthermore, regarding the CI, data on cleanliness will only be available after the first year of the project when the baseline study (routing optimization, bin evaluation, evaluation of streets/areas) is conducted. CI performance targets proposed in the technical scorecard will thus be calibrated after Year 1.

Table 3 Key Indicators and Proposed Weights

#	Indicator	Weights: Year 1	Weights: Years 2-4
1	Strategy development/MIS implementation	50%	–
2	Improvement in cleanliness of areas	15%	20%
3	Increase in total waste managed	20%	30%
4	Increase in percentage fee collection by M/VCs		
4a	• Increase in percentage fee collection in Hebron governorate	9%	15%
4b	• Increase in percentage fee collection in Bethlehem governorate	6%	10%
5	Increase in cost recovery	–	25%
	Total	100%	100%

The actual subsidy payment for each indicator, in each audit period, will be calculated based on the indicator’s weight and on the year’s subsidy requirements, provided they are above the minimum performance levels identified. If performance for any indicator falls below the minimum performance level, no subsidies are disbursed for that particular indicator. In cases where performance just meets the minimum performance level, a minimum percentage of the subsidy allocation is disbursed (60%). If performance meets or exceeds the target set for each audit, the full subsidy allocated for that indicator is disbursed (100%). If performance is above the minimum performance level, but below the target level, prorated subsidies are disbursed. An example of the calculations described above is presented in Annex 1.

If performance falls short of achieving the set targets during a given verification period, JSC-H&B will be given a chance to catch up in the subsequent period. Assuming targets that are missed are achieved in the subsequent period, OBA funds allotted for the preceding period would be paid in addition to those for the current period if targets for the current period are successfully met. This would reinforce the incentive to improve performance to the pre-agreed levels and would not unduly penalize M/VCs and JSCs should political or other implementation challenges (e.g. temporary movement restrictions) occur in a particular period. This mechanism is deemed necessary within the context of the West Bank and Gaza.

The GPOBA funds will cover both the subsidy and the costs for the IVA. The project will also include implementation support to JSC-H&B and municipalities for project management, and M&E, which costs will be funded through the WB and IFC projects. Annex [11](#) provides a description of the proposed technical assistance.

Implementation of SW Service Improvement Plan (SIPs)

A key component of the project is the development of SIPs corresponding to set targets. The SIPs aim at guiding service providers towards providing higher service level and improve financial sustainability. The SIPs outline the steps that M/VCs and JSCs need to take to meet the set OBA Targets. The actions in the SIPs are based on specific issues that different M/VCs face to manage their SWM system, allowing M/VCs to address their unique challenges differently while working towards common goals for the entire project area.

Mechanism for independent output verification

The OBA grant will be subject to independent verification to assess the scores for each OBA Target and its associated indicators. The IVA will review progress annually semi-annually and evaluate achievements against the agreed target for the indicators identified. Each review will result in a score against which the payment is prorated assuming the minimum passing score is achieved for each indicator. At the JSC level, the IVA will review the MIS records to check that scores have been calculated correctly and subsequently select a sample of that data entered in the MIS to verify whether it has been recorded accurately. Acceptable verification will trigger the transfer of the corresponding OBA grant to JSC-H&B. The scorecard will be used for both independent verification and overall project’s M&E purposes. Figure 4 illustrates the anticipated timeline for implementing the SIPs, and achieving the OBA Targets.

Figure 2 SIP implementation timeline



B4. Economic and Financial Analysis

Calculation of OBA Subsidy

The costs of improved service delivery and the revenues collected were estimated in order to arrive at the subsidy required over the four year period (Table 4).

Service delivery costs include: (i) primary collection costs comprised of O&M expenses for JSCs and M/VCs; (ii) final disposal costs represented by the payment to the private operator; and (iii) JSC-H&B operating costs. Revenues collected include: (i) user fees from households; (ii) revenue from commercial establishments; and (iii) other municipal sources.

Solid waste fees cover: (i) primary collection costs; (ii) costs of transport to transfer stations; (iii) O&M costs of the sanitary landfill and transfer stations; and (iv) administrative costs of the landfill operator and JSC-H&B. These costs are expected to increase from current levels as operating a sanitary landfill will be more expensive than operating the current dumpsites.

The subsidy will complement, on a temporary, transitional basis, user fees that are owed to M/VCs and JSCs to cover the costs of adequate service during four years. As OBA payments will be made in output-based manner, service providers will be incentivized to deliver the outputs as defined in their technical scorecard. The General Cost Model provides estimates for the costs of service delivery and subsidy level required (Table 4 and Annex 2).

Table 4 Cost Model

	2013 (6 months)	2014	2015	2016	2017 (6 months)
Primary Collection Costs	8,333,246	17,689,363	18,694,438	20,154,519	11,216,987
Final Disposal Costs	5,520,129	12,299,965	13,849,613	15,918,326	9,298,081
Total SWM Costs	13,853,375	29,989,327	32,544,051	36,072,846	20,515,067
Monthly Household Tariff (NIS/HH)	12.6	13.8	14.8	16.0	18.0
<i>Household Tariff Collection Ratio*</i>	48%	56%	65%	75%	80%
Revenue from Household Tariffs	4,784,750	12,582,077	16,413,638	21,128,315	13,259,553
<i>Commercial Tariff Collection Ratio</i>	60%	60%	60%	60%	60%
Revenue from Commercial Establishments	2,227,079	4,454,158	4,454,158	4,454,158	2,227,079
Total Revenue from User Fees	7,011,829	17,036,235	20,867,796	25,582,473	15,486,632
<i>Total HH Billings to Cost Ratio</i>	72%	76%	78%	79%	81%
<i>Total User Fee Collection Ratio</i>	51%	57%	64%	71%	75%
Shortfall	6,841,547	12,953,092	11,676,256	10,490,373	5,028,436
Municipal Transfers (NIS)	1,778,802	3,756,397	4,203,452	4,510,860	2,715,355
<i>Total Alternative Sources to Cost Ratio</i>	13%	13%	13%	13%	13%

GPOBA Subsidies Required (NIS)	5,062,744	9,196,696	7,472,804	5,979,513	2,313,080
Total GPOBA Subsidy to Cost Ratio	37%	31%	23%	17%	12%
Total GPOBA Subsidy (NIS)	30,024,837				
Total GPOBA Subsidy (USD)	8,006,623				

*Average of Hebron household tariff collection ratio & Bethlehem household tariff collection ration

Cost-Benefit Analysis

A cost-benefit analysis (CBA) has been carried out (Annex 2) to demonstrate that the project is both desirable from an economic point of view and requires the subsidy for financial viability. It should be recognized at the outset that benefits from environmental sector projects, such as SWM, are particularly difficult to quantify in monetary terms. The economic assessment of such elements should therefore be viewed as approximate. The CBA evaluates three scenarios that decision makers are faced with:

- 1) Do Nothing Scenario: this scenario assumes that primary collection remains provided at the current level of service, i.e. no improvement in quality of services or efficiency, final disposal (operation of Al-Minya and associated transfer stations) is operated by JSC-H&B and there are no GPOBA funds to complement user fees. The NPV is -US\$59,214,187.
- 2) PSP Scenario: this scenario assumes a private operator managing the final disposal operations (transfer stations, long haul and landfill), and the continuation of current primary collection system. The NPV is US\$40,534.¹¹
- 3) PPP and OBA Scenario: this scenario assumes that SWM services are provided at the targeted level, with final disposal operations through a private operator and primary collection through OBA subsidies. The NPV is US\$8,232,728.

Economic/Internal Rate of Return (E/IRR)

The IRR (often used as a metric for evaluating attractiveness of investments) is the discount rate that makes the NPV of project cash flows equal to zero¹². However, as shown in Annex 2, the cash flows is negative in the Do Nothing scenario and positive in the PSP and GPOBA scenarios. Therefore, it is not mathematically possible to arrive at a discount rate that would produce a zero value NPV ((IRR). Thus, NPV of cash flows has been used to compare the three scenarios.

The Project aims to enable service improvements for primary collection, which would otherwise not be possible given the challenges associated with the low WTP among consumers, and fiscal constraints of municipalities. The full benefits of with such improved services can only materialize in the combined PPP and OBA scenario. The NPV of the combined scenario is approximately US\$8.2 million, which is significantly greater than the two other scenarios, demonstrating the positive impact of the grant. Furthermore, the above-mentioned estimation is conservative, as there are several economic and social

¹¹ The absence of the OBA subsidy would not impact payment of the landfill operator as other municipal revenue sources can be automatically diverted to cover SWM costs based as per MoLG's decision enabling JSC-H&B to have first claim on certain fees and taxes collected by MoLG on behalf of M/VCs, should M/VCs fail to collect sufficient SWM fees to cover SWM costs. However absence of the OBA subsidy would impact end user service, as M/VCs and JSCs would not have sufficient resources to improve service.

¹² Source: <http://www.investopedia.com/terms/i/irr.asp#axzz2Dsrj9OGf>

benefits that are difficult to quantify and therefore have not been included, such as the aesthetic value of improved cleanliness, the sense of pride in one's neighborhood, appreciation in the value of land and homes.

B5. Lessons Learned and Reflected in the Project Design

OBA approaches have been applied mainly in the infrastructure sectors (e.g. water, electricity) to provide or increase access to services, where the cost of providing such access would be unaffordable to the poor. To date, there is only one project in the SWM sector where the OBA approach has been applied, namely a project in Nepal; however, since implementation of this project has not yet started, it is premature to draw lessons from this case. Other OBA or results-based financing SW projects are currently being developed including in Ghana, China, Tanzania, Indonesia, and Comoros.

Based on a review of the few Bank-supported SWM projects and IFC's experience in the solid waste sector, the following lessons have been identified and reflected in the project design:

- *SWM projects should be implemented within a broader capacity building initiative, especially in the case of the implementation of a new performance regime.* Improving the overall management capacity is key to ensuring successful implementation of service improvement action plans and more broadly the OBA pilot project. The World Bank project has been focusing on capacity building, trainings and operational manuals. The envisaged OBA pilot intends to build on this initiative. Complementary technical assistance activities, such as assistance in developing a MIS, evaluating fee collection mechanisms and conducting awareness raising workshops and education campaigns will be undertaken to increase the chances of success.

A key component of this assistance will include the development of a MIS to track performance across municipalities, thereby providing data to enable better management. Proper financial management, including revenue mobilization, planned expenditure and maintenance of financial discipline, is critical to effective delivery of urban services, including SWM. Therefore, the MIS will track OBA Targets and indicators, as well as other data useful to system managers in understanding the nature of continuing areas for improvement. The scope of work and costs of the technical assistance are provided in Annex [11](#).

- *Stakeholder buy-in is key to successful project implementation.* Several preparatory activities have been carried out to gauge stakeholders' concerns and ensure their early engagement. Separate focus group meetings were held with both end-users and municipal SWM staff to discuss SWM issues and concerns. Community meetings were held in rural and urban areas within both Hebron and Bethlehem governorates (five in Hebron and four in Bethlehem), during which discussions were held and participants were asked to fill out questionnaires. The questionnaires generally covered demographics, waste management services, and waste management fees. Moreover, stakeholder meetings held during project preparation revealed that users' reluctance to pay stems from dissatisfaction with the current service level, and indicated a higher WTP for satisfactory level of service. Targets for fee increase were estimated taking into account this information. Consultations with key regional SWM management (JSC-H&B, JSCs) were also held to understand practical concerns and challenges in implementing the Project. A

key outcome of such consultations is the need to ensure buy-in across the service area by requesting individual municipalities to commit to the OBA scheme by providing JSC-H&B with letters of participation.

- *OBA projects must align as much as possible with existing institutions and government systems to increase the chances of sustainability and replication.* The proposed OBA project is designed to work within existing public entities. The World Bank project involved implementing structures such as the TOU and developing capacity building initiatives within the existing institutions. The envisaged OBA pilot will build on this success and continue to rely on this institutional framework as setting up new entities will add complexity, pose further coordination challenges and seems unnecessary given the capabilities demonstrated by the TOU thus far.
- *Both political championing and technical capacity are necessary for improving the overall SWM system, as well as for a successful PPP.* Because multiple stakeholders are involved in the waste sector, coordination and championing are key. The JSC-H&B's mandate focuses on SWM system improvement, with political support of MOLG. JSC-H&B is spearheading a number of activities such as preparing guidelines on SWM tariff system, development of national guidelines on closure of unsanitary dump sites and improving final waste disposal services at Al-Minya. In terms of implementation capacity, its TOU has benefited from earlier capacity building. Further, the JSC-H&B is already well represented in territory-wide issues affecting the sector. As a result, and given that the GPOBA project supports achieving JSC-H&B's broader objectives in the sector, the TOU is currently serving, and is expected to continue to serve, as the necessary champion.

The above lessons learned show that implementation of PPPs and OBA pilot projects are part of an overall process of improving the SWM system as a whole, in which the various stakeholders need to be involved, smooth transitional measures need to be implemented, and adequate human, financial and technical resources mobilized.

B6. Alternatives Considered and Reasons for Rejection

While the proposed scheme has been determined to be the most appropriate to encourage the improvement on the agreed outputs, a number of alternatives were considered to reach this conclusion. These alternatives include:

- **Typology of municipalities across which targets and indicators can be set and measured:** The purpose of developing a typology for municipalities was to group them according to similarities in current operations, service level provision, fee collection or operational structures. It was believed that this typology could then provide an organizational structure within which indicators or targets can be defined. However, fieldwork revealed that there is very little consistency of service provision, operational systems or fee collection, for example, between M/VCs in Hebron and Bethlehem governorates. As such, it was not possible to develop meaningful typologies. Nonetheless, where applicable and relevant, OBA Targets take into consideration the characteristics of M/VCs; for

example, for Indicator (4) Increase in Percentage Fee Recovery, the targets for Hebron are different than Bethlehem as they are starting from different baselines.

- **Selection of scheme participants (all M/VCs in both governorates):** The main consideration regarding this issue was whether all M/VCs in Hebron and Bethlehem governorates would *de facto* participate in the OBA scheme. This was initially considered as it would serve to include as large a base as possible in the efforts to improve SWM services in both governorates. However, this option was not ultimately adopted as it does not provide a demonstration of commitment from the participants. By including all M/VCs in the scheme, this could include parties who are unwilling to commit to the undertakings required to achieve the M/VC targets identified. This would result in failure to meet overall targets, thereby penalizing those M/VCs that have achieved their respective targets. As such, it was decided that the M/VCs to be included in the scheme are the ones who demonstrate commitment by signing the letter of participation.
- **M/VCs that join JSCs:** As stated earlier, not all M/VCs have primary collection services provided by their respective JSCs (JSC-H or JSC-B). It was expected that economies of scale would help the M/VCs reduce the cost per ton of primary collection, so a potential option for project beneficiaries was M/VCs that are members of, or have their primary collection services provided by JSCs. However, fieldwork has revealed that some M/VCs are able to provide the services at costs that are at par/lower than what they may have to pay to the JSCs for provision of the service. As such, it was decided that this would be an unduly restrictive definition of project participants, because M/VCs should be allowed to choose the most cost effective alternative for the provision of primary collection services at the targeted level of service.
- **Identification of the most appropriate indicators to capture improvements agreed at the concept stage:** A number of indicators (e.g. “number, condition, distribution and capacity of bins”, “number and capacity of trucks”, “frequency of waste collection” and “use of personal vs. communal bins”) were rejected because different M/VCs face different problems, hence they would not be relevant or meaningful for all M/VCs. It was therefore decided that “Cleanliness of areas” and “Total waste managed” be utilized as indicators to gauge quality of service provided, given that they are easier to measure and a uniform scoring system across areas can be designed to track them. “Number of people served (% coverage receiving improved service)”: field work has indicated that 98% of people are already receiving some form of waste service; therefore, access to service per se is not an issue. However, it is the quality of service provided that varies. As such, coverage is not used as an indicator, and instead, Cleanliness of areas and Total Waste Managed are the indicators chosen that will help track the quality of service provided.
- **Verification period:** Quarterly reviews were considered; however, that would not allow a sufficient implementation period for service improvements to show results and would therefore create unnecessary burden on implementing agencies as well as the IVA.

C. IMPLEMENTATION

C1. Project Cycle

The three-step project cycle proposed is as follows (Figure 2):

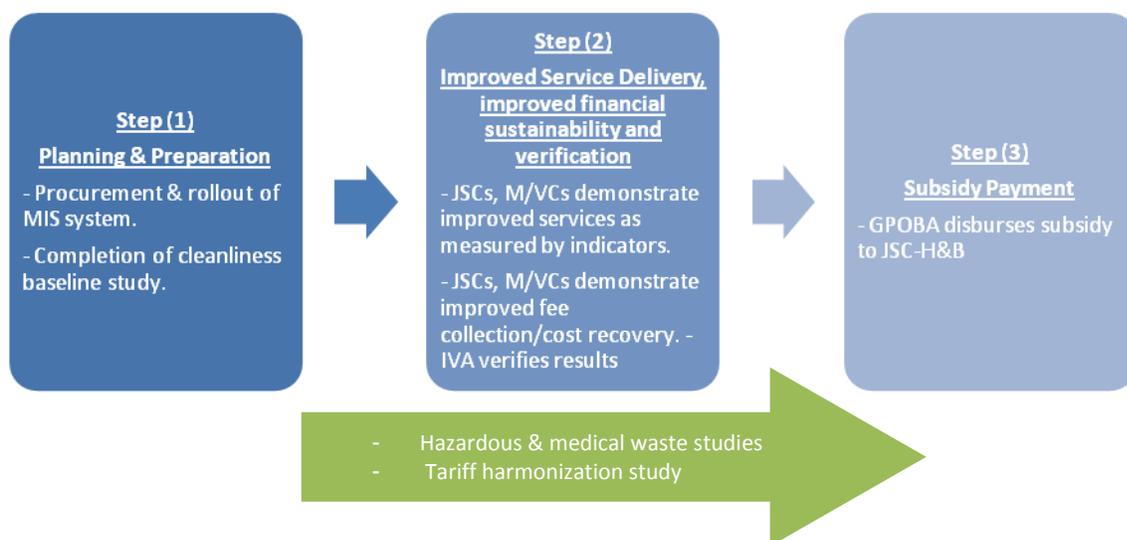
Step (1): JSC-H&B will procure and roll out the MIS system in cooperation with JSCs and M/VCs, and conduct the cleanliness baseline study (Year 1).

Step (2): JSCs and MSC/VCs will undertake SW improvements and achieve OBA Targets (Years 2-4).

Step (3): IVA will: (i) verify the data generated by M/VCs and JSCs and reported by JSC-H&B; and (ii) recommend disbursement of the corresponding subsidy amount (Years 2-4).

Additional studies aimed at improving the SWM system, such as medical and hazardous waste studies and tariff harmonization studies, will also be conducted in parallel with the implementation of the scheme.

Figure 3 Project Cycle



C2. Project Implementation Milestones and Disbursement Profile

The key milestones for the implementation of the Project and the anticipated disbursement schedule are presented below.

Table 5 Key Milestones for Project Implementation

Milestone	Expected completion
GPOBA provides subsidy commitment	February 2013
Project operational manual finalized	May 2013
Grant Agreement signed	April/May 2013
Implementation of SWM SIPs begins	June 2013
Recruitment of IVA	October 2013
1 st Independent verification	December 2013
1 st Subsidy disbursements	January 2014
2 nd Independent verification	June 2014
2 nd Subsidy disbursements	July 2014
3 rd Independent verification	December 2014
3 rd Subsidy disbursements	January 2015
4 th Independent verification	June 2015
4 th Subsidy disbursements	July 2015
5 th Independent verification	December 2015
5 th Subsidy disbursements	January 2016
6 th Independent verification	June 2016
6 th Subsidy disbursements	July 2016
7 th Independent verification	December 2016
7 th Subsidy disbursements	January 2017
8 th Independent verification	June 2017
8 th Subsidy disbursements	July 2017

Table 6 Disbursement Profile

COMPONENT	2013	2014	2015	2016	2017	TOTAL
OBA Subsidy (maximum amounts)	1,350,065	2,452,452	1,992,748	1,594,537	616,821	8,006,623
Technical Assistance	20,781	41,563	41,563	41,563	20,781	166,250
Bank Supervision	37,500	75,000	75,000	75,000	37,500	300,000
Project M&E and Verification	31,250	62,500	62,500	62,500	31,250	250,000
TOTALS	1,439,596	2,631,515	2,171,811	1,773,600	706,352	8,722,873

C3. Implementing Arrangements

Implementing arrangements

JSC-H, JSC-B and M/VCs are responsible for the primary collection of waste. JSC-H&B will be responsible for ensuring that the overall SWM system in the targeted areas meets the OBA Targets. The TOU hosted in JSC-H&B will be responsible for managing project implementation. The TOU comprises JSC-H&B staff who are mainly non-civil servants, newly contracted by the JSC-H&B for the WB-funded

project¹³, including a project director, technical officers (environmental, financial and social), a procurement officer, and an administrative assistant. The TOU team will be responsible for managing project implementation, which will include the following tasks: (i) all procurement activities associated with the project, (ii) implement and rollout the MIS in each M/VC to ensure collection and reporting of all relevant data, with the assistance of an external consultant, (iii) maintaining financial records, (iv) preparing reports to be verified by the IVA, (v) submitting requests for disbursement of funds to MOF and World Bank/GPOBA, (vi) supporting and coordinating with the JSCs and M/VCs on progress towards project targets, and (vii) managing the PPP contract with the private operator at Al-Minya. The TOU has previously participated in the design and construction of Al-Minya Landfill and is expected to have the required capacity to implement the above tasks.

JSC-H&B was established to address common SWM problems in Southern West Bank, including aspects of final waste disposal. JSC-H&B has already been playing this role through the development of the scheme. Workshops were organized in nine M/VCs –5 community meetings in Hebron and 4 in Bethlehem— to ensure that the scheme design is based on the challenges of the service providers and has M/VC support.

To ensure commitment of participating parties and smooth flow of information, M/VCs will be required to sign letters of participation to indicate commitment to meeting targets and sharing necessary information. Should there be any problems with respect to the flow of information, M/VCs and JSCs have access to JSC-H&B through their representatives on the JSC-H&B board.

The WB, as the administrator of GPOBA, will enter into a Grant Agreement with the PLO, to the benefit of the PA. The PLO and the PA (represented by MOF) will subsequently sign a Subsidiary Agreement to the grant funds to the PA. The PA will in turn enter into an On-granting Agreement with JSC-H&B¹⁴. This contracting arrangement is illustrated in Figure 3.

An independent external auditor that has been contracted under the SWBSWMP will also audit the Project's financial statements on an annual basis in accordance with internationally accepted auditing standards and TOR acceptable to the Bank.

Funds flow

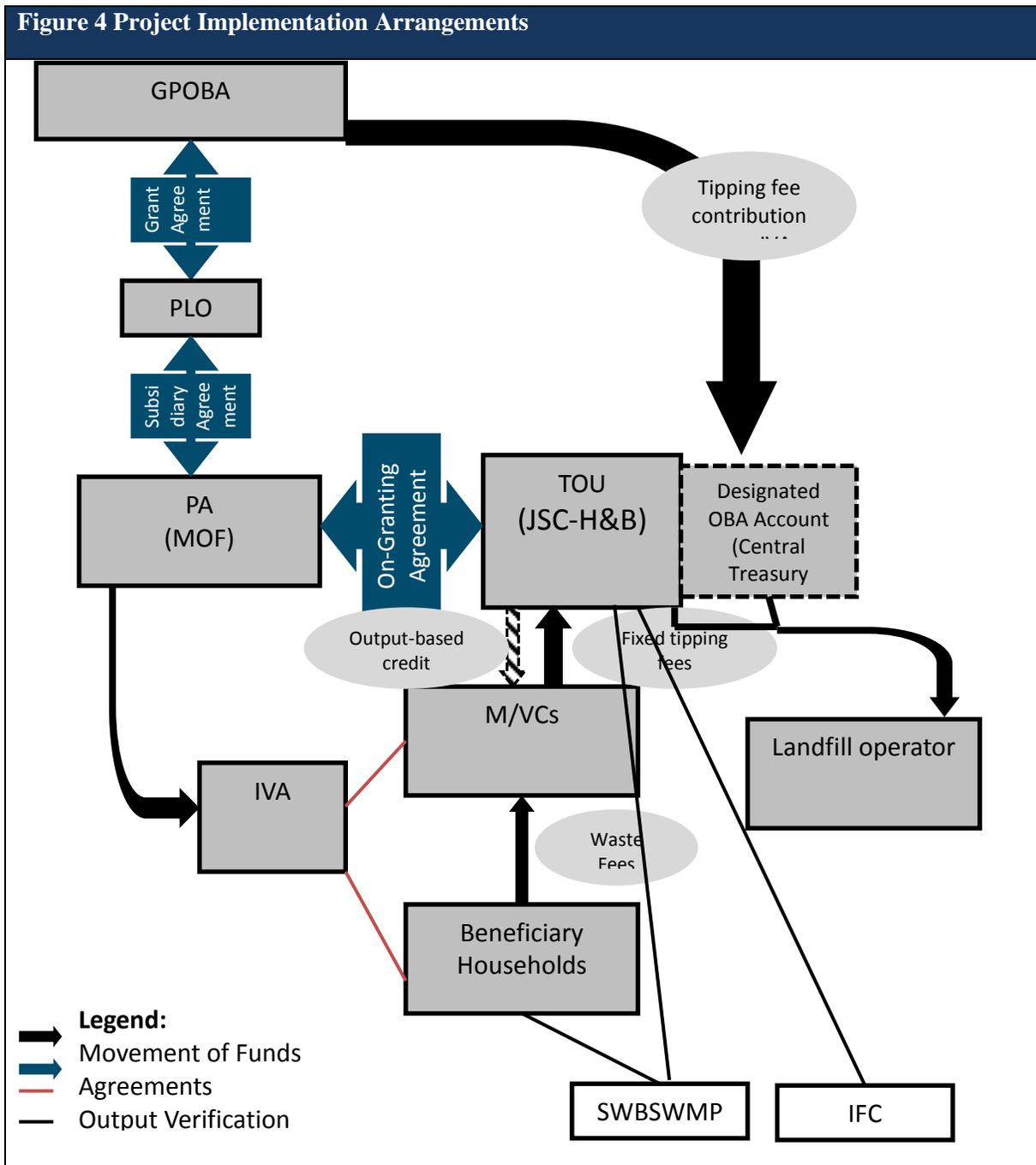
GPOBA funds will be disbursed in a Designated OBA Account opened by MOF (on behalf of the PA¹⁵) under the Central Treasury Account (CTA) and managed by JSC-H&B. As per GPOBA requirement for funds provided by IFC, the GPOBA funds will be used solely for the purpose of paying the private operator. Upon meeting of targets by JSC-H, JSC-B and M/VCs and annual and semi-annual verification by the IVA, the JSC-H&B TOU will submit a request for disbursement of funds to MOF and World Bank/GPOBA to be deposited in the Designated OBA Account. JSC-H&B will then withdraw the

¹³ The hiring was through a committee from Hebron and Bethlehem Municipalities and Municipal Development Fund

¹⁴ The contracting arrangements between the WB, PLO and PA have been adopted due to the unique status of the West Bank and Gaza. As the West Bank and Gaza are not a sovereign state, they cannot apply for membership of the WB Group; therefore, they are not eligible for sourcing of financing normally available to member states. To overcome these legal and practical problems, the Trust Fund for Gaza and West Bank (TFGWB) was established in 1993. WB assistance to the PA is provided through the TFGWB and GPOBA grant assistance will follow similar arrangements.

¹⁵ The PLO, as grant recipient, on granted the grant funds through a subsidiary agreement to the PA (MOF).

amounts required to pay a portion (decreasing over time) of the tipping fees due to the private operator on behalf of the JSCs and M/VCs.



Service delivery models

The Southern West Bank is comprised of M/VCs that vary considerably in terms of size, context, capacity and appetite for change. As such, M/VCs can choose to have primary waste collection services provided

by the relevant JSC (JSC-H in Hebron and JSC-B in Bethlehem), or to perform primary collection services themselves. The outline SIP highlights groupings of M/VCs that are facing certain challenges the extent possible. As targets are set more generally across the entire system, participating M/VCs are then able to adapt the SIP as necessary for their unique conditions. JSC-H&B has the mandate to monitor the municipalities and help support the different types of improvements to be made. In addition, it will facilitate the achievement of targets at the municipal level through the complementary TA (Annex 11).

C4. Monitoring and Evaluation

A key goal of the Project is to establish a M&E framework that could later form the basis for continuous sector improvement. The framework will enable JSC-H&B to monitor and evaluate progress towards agreed targets for improved service quality and financial sustainability. Technical scorecards will be used in the verification process. Furthermore, the MIS system will facilitate the monitoring and evaluation process and help accomplish the long term goal of continuous sector improvement. In addition, a pilot to monitor customer satisfaction is being considered for medium/long term implementation, where the World Bank is considering tracking customer satisfaction through the use of ICT (e.g. mobile phones). Although implementation may happen in the medium/long term, this would help JSC-H&B monitor customer satisfaction efficiently.

C5. Sustainability

There are several critical challenges that must be overcome to ensure long-term financial and environmental sustainability, including: public understanding about the service being delivered, and service quality issues, and fiscal management challenges. Although this is beyond the direct scope of key project stakeholders, the ongoing challenges associated with the political and economic situation also affect the ability to achieve long term sustainability in the SWM sector.

Several factors are reflected in the project design to ensure the sustainability of the Project outcomes:

- *Appropriate indicator design:* the project's performance regime is comprised of indicators that track operational efficiency and cost savings in order to reduce burden on municipalities and households. The stakeholders within the SWM sector are expected to build on the achievements realized within the OBA framework, thus reinforcing sustainable project outcomes. Moreover, the performance regime and the SIPs entail measures to improve tariff and collection systems via the development of a standardized system of tariff setting and fee collection, where deemed needed and/or possible. At the disposal level, the proper operation of the landfill and transfer stations through a performance-based operating contract will ensure proper sanitary waste disposal to better ensure environmental sustainability.
- *Institutional anchoring and capacity building:* the institutional anchoring of the Project is key to sustainability and replicability. The scheme will use the existing institutions and procedures without creating additional layers. Although it will introduce an innovative payment mechanism, actionable SIPs will ensure buy-in from stakeholders. Another important measure is the development and implementation of a MIS to track indicators throughout the Southern West Bank. Furthermore, the World Bank is also providing capacity building in the sector focusing on

policy, operational and administrative aspects of SWM. The World Bank project specifically supports MEnvA in the areas of: (i) monitoring and reporting on environmental aspects of transfer stations and landfill operation, (ii) monitoring the closure of dump sites to ensure compliance with environmental regulations.

- *Public awareness:* ongoing WB support and project SIPs include activities aimed at raising awareness of the beneficiary communities about solid waste management policies and procedures. The project seeks the cooperation of the beneficiary communities in service efficiency improvements, compliance with regulations and timely payments for services.
- *Regulatory framework:* as per the local legislation (through secondary by-laws), JSC-H&B is entitled to claim other sources of revenues from municipalities such as taxes and road safety fees.
- *World Bank funding:* the construction of the landfill and associated facilities constitutes a large upfront investment; however, this burden is alleviated as the initial investment has been funded by a WB grant and other donors.

C6. Critical Risks and Mitigation Measures

Table 6 Risks and Mitigation

RISK	CONTEXT/MITIGATION	RISK RATING
Willingness-to-pay by households	<p>The Project supports specific measures to help mitigate affordability and WTP risk:</p> <ol style="list-style-type: none"> 1) <u>Setting SWM charges at levels established from WTP and ATP assessment:</u> proposed tariffs are in line with information available on percentage of income spent on SWM service. 2) <u>Improving service quality:</u> field work during project preparation show that the perceived quality of SWM services a key factor for WTP. Currently 60% of the participants in rural communities are dissatisfied with the SWM services in both governorates. Expected improvement in service quality and perceived accountability and transparency in the management of the fees charged for SWM services and overall system efficiency (e.g. reductions in operating costs), as per the project design, will increase WTP. 3) <u>Setting cross-subsidy mechanism:</u> JSC-H&B is in the process of procuring TA for the development of Guidelines for SWM Tariff and Fee Collection Systems. These guidelines will identify appropriate cross-subsidization mechanisms to alleviate burden on users with lower affordability, and help identify appropriate tariff collection mechanisms to increase collection ratios. Potential for cross-subsidization between high waste generators (i.e. commercial establishments and households) in combination with improved services will help increase WTP. 4) <u>Implementing public campaign</u> to raise awareness of the need to pay for SWM services and to keep the city clean. Field work indicates that some residents feel that SWM should be paid for through other taxes and municipal revenue sources. Awareness-raising workshops will be implemented as part of the Project on service improvements made available and the importance of household contribution to the cost of properly managing solid waste. 	High
Failure to achieve SWM performance	<ul style="list-style-type: none"> • Early stakeholder engagement and setting up of an adequate institutional framework are necessary to ensure successful transition towards an OBA approach. Workshops and meetings with communities and JSCs' management staff were 	Medium

indicators	<p>carried out to gauge stakeholders' concerns and propensity to change and ensure their buy-in.</p> <ul style="list-style-type: none"> • Project participants will be required to demonstrate formal commitment by signing letters of participation. • The Project will mobilize technical, human and financial resources to maximize chances of efficient implementation of the pre-set performance regime, especially during Year 1. Notably, implementation support will be provided by WB and IFC to help municipalities establish efficient SWM billing and collection systems. 	
Sustainability after the project	<ul style="list-style-type: none"> • The Project is expected to put solid waste operations on a reasonable financial footing at the end of four years, through tariff increases and improvements in fee collections to increase the funds available to pay for SWM services. This will strengthen M/VCs' ability to commit resources thereafter to cover the costs that may be needed going forward, without compromising other municipal services. The project will ensure this by supporting the development of a standardized system for tariff setting and fee collection and facilitating payments. • The OBA subsidy will complement user fees in the first four years of the landfill operation, as tariffs increase to cover improved service costs. As service improves, and WTP increases while service becomes more efficient, operational costs will increasingly be funded through user fees. • The Project benefits from parallel implementation support at the JSC-H&B level (WB/IFC) and at the municipal level (WB) to build human capacity and systems for SWM in each M/VC. • The Project requires upfront commitment of M/VCs to increasing SWM fees to ensure the financial viability of providing the services. • JSC-H&B can claim M/VCs other sources of revenues (taxes, road safety fees, etc.). This can be complemented by revenues collected by JSC-H&B from commercial establishments and ancillary activities, which may increase in later years as source separation schemes become accepted. 	Medium
Implementing agency capacity	<ul style="list-style-type: none"> • The OBA pilot builds on the technical support and capacity building initiated by the WB in existing institutions and bodies such as the TOU. The TOU has successfully tendered and contracted out the landfill construction works, which are scheduled to be completed by the end of the first quarter of 2013. In addition, the TOU has successfully tendered construction supervision services under ICB procedures and small works contracts for the closure of the illegal dumpsites under NCB procedures. • Complementary technical assistance has been taken into consideration to maximize chances of successful implementation. • At early stages of the implementation, higher importance has been given to indicators and targets related to the general performance framework, in particular, the establishment of institutional framework and actionable plan with buy-in from key stakeholders, implementation of a MIS to track indicators, and development of detailed plans to achieve environmental best practices and closure of unsanitary dumpsites. • As various implementing agencies (JSC-H, JSC-B and JSC H&B) will be responsible for project implementation and monitoring, there is a risk of poor coordination accentuated by lack of capacity at individual institution level. Detailed definition of institutional arrangements and roles has been incorporated into the project design, especially when it comes to determining at which levels the performance indicators and targets have to be monitored and reported, data have to be collected, consolidated and communicated to the IVA for verification. Roles are defined based on the specific responsibilities of each institution in the SWM service chain. In the event that an entity does not have sufficient capacity to carry out its responsibilities as necessary to meet OBA Targets, additional technical 	Low

	assistance and capacity building initiatives will be devised.	
Illegal dumping	<ul style="list-style-type: none"> • MoLG will apply laws and regulations to prevent illegal dumping which will be monitored by MEnvA. The Solid Waste National Team is currently drafting a Waste by-law to regulate these matters. • A detailed plan to close unsanitary dumpsites has been designed and is being implemented by JSC-H&B, which is a component of the WB grant (MEnvA will be responsible for monitoring and reporting on environmental aspects of the said closures) but its effectiveness is set as a performance indicator in the context of the OBA scheme. • Given that a waste tonnage guarantee will be provided to the private landfill operator as a part of the PPP agreement, the disposal of waste outside of the landfill will not reduce JSC-H&B costs, which would ultimately be passed to users. 	Low
Security situation may deteriorate and prevent part of the achievement of OBA Targets (particularly related to transport of waste due to possible movement restrictions)	<ul style="list-style-type: none"> • All permits from the Israeli side have been acquired for both construction and operating activities in Zone C¹⁶, which reduces the risks of operation and mobility of staff in the area, and thus the risk to implementation of SWM service. • The locations of potential movement restrictions are difficult to predict and therefore difficult to manage. In the recent past, movement restrictions have been frequently short-lived and would not be expected to cause disruptions to the provision of SWM services. • In the event that uncertainty increases and more permanent restrictions materialize, the involvement of the WB is essential to reduce risk. Historically the WB has been able to open a dialog between Israeli and Palestinian entities to reduce the impact of restrictions on WB projects. For example, in the past, agreement was reached to provide ambulance status to waste vehicles so that these vehicles would be able to move through checkpoints more quickly, thus reducing the impact on service provision. 	Medium
Implementation risk	<p>Municipalities may not commit to using the new SWM facilities and instead continue to use illegal dumpsites:</p> <ul style="list-style-type: none"> • MoLG will apply laws and regulations to prevent illegal dumping which will be monitored by MEnvA. The Solid Waste National Team is currently drafting a Waste bylaw to regulate these matters. • Continued coordination between JSC-H&B and municipalities (e.g. purchasing new collection vehicles) will be sought. Recommendation as to what the coordination will entail will be made under IFC-funded Technical Assistance. 	Low

¹⁶ Zone C consists of areas in the West Bank that are remain under Israeli military control.

Annex 1: Project Costs Subsidy Disbursement Calculations

Table 1 Project Cost Breakdown (GPOBA and Other Funding Sources)

COMPONENT	FUNDING (USD)
OBA Subsidy	8,006,623
Project Management, Monitoring and Verification Activities	250,000
Bank Supervision	300,000
Total GPOBA Subsidy	8,556,623
Technical Assistance (WB and IFC financed):	
<i>MIS Development</i>	81,000
<i>Development of Guidelines for SWM Tariff & Fee Collection Systems</i>	30,000
<i>Public Awareness and Education Strategies</i>	40,250
<i>Consultancy (regulatory & industry specific for Medical Waste Management and Large-Scale Slaughterhouse)</i>	30,000
TOTAL	8,722,873

The formulae for calculating subsidy disbursals are presented below:

$$DF = \begin{cases} 0; & \text{when } \frac{(I_{Actual} - I_{Min})}{(I_{Target} - I_{Min})} < 0 \\ \frac{(1 - S_{Min\%}) \times (I_{Actual} - I_{Min})}{(I_{Target} - I_{Min})} + S_{Min\%}; & \text{when } \frac{(I_{Actual} - I_{Min})}{(I_{Target} - I_{Min})} > 0 \\ 1; & \text{when } I_{Actual} > I_{Target} \end{cases}$$

$$S_{Dis} = DF \times S_{All}$$

Where:

DF = Disbursal Factor (percentage of subsidy that would be disbursed);

I_{Target} = Indicator Target;

I_{Min} = Minimum Performance Level for the Indicator;

I_{Actual} = Actual Performance Level for Indicator (as determined during audit by the IVA);

$S_{Min\%}$ = % of Subsidy Allocation Disbursed for Minimum Performance;

S_{All} = Subsidy Allocation for the Indicator (for the audit period); and

S_{Dis} = Subsidy to be Disbursed.

Example

Indicator (2) Cleanliness of Areas

$$I_{\text{Target}} = 40$$

$$I_{\text{Min}} = 36$$

$$I_{\text{Actual}} = 38$$

$$S_{\text{Min}\%} = 60\%$$

$$S_{\text{All}} = \$ 245,245$$

$$DF = [(1 - 60\%) \times (38 - 36)] / (40 - 36) + 60\% = 0.8$$

$$S_{\text{Dis}} = 0.8 \times 245,245 = \mathbf{\$196,196}$$

Annex 2: General Cost Model and Cost Benefit Analysis

Cost Model

For each year of the subsidy period estimated total cost will be calculated as follows:

$$\text{Total Cost} = \text{JSC-H\&B Operating Costs} + \text{Final Disposal Costs} + \text{Primary Collection Cost (M/VC)} + \text{Primary Collection Cost (JSC-H)} + \text{Primary Collection Cost (JSC-B)}$$

Some reduction in operating costs per ton of waste, resulting from improved efficiency is expected, particularly in areas with higher primary collection operating costs (e.g. Bethlehem). Moreover, SWM O&M costs are assumed to increase with inflation at approximately 4%.

Furthermore, the revenues that factor into the calculations of the cost model are comprised of: (i) user fees paid by households (NIS/household) in each governorate; (ii) fees paid by commercial establishments (NIS/establishment); and (iii) other municipal sources (in cases where collections from user fees are not sufficient, M/VCs may choose to plug part of the gap by using other sources of municipal revenues that they have at their disposal, such as road charges). As such, for each subsidy period, total revenues (excluding GPOBA grant funding) will be calculated as follows:

$$\text{Total Revenue} = \text{Household User Fees} + \text{Commercial Establishment User Fees} + \text{Other Municipal Revenues}$$

In order to develop conservative estimates, commercial fees (both fee levels as well as collection rates) are held constant; however, there is potential for revenue from commercial establishments to grow over the years. The table below shows the key cost and revenue assumptions used in the cost model to arrive at the level of GPOBA subsidy required

Table 2 Key Cost Model Elements

Parameters	Description
Total waste generation (TPD)	Based on waste generation in Hebron and Bethlehem governorates (TPD)
MSW managed by JSC-H and JSC-B (TPD)	Based on amounts reported by JSCs.
MSW managed by M/VCs not under JSCs (TPD)	
Total waste generated and arriving at the landfill	Derived from waste generation line items above.
Primary collection costs for MSW from JSC-Hebron and M/VCs not under JSCs arriving at landfill (NIS)	Based on details of O&M costs (primary collection) reported by M/VCs.
Primary collection costs for MSW from JSC-Bethlehem arriving at landfill (NIS)	
Unit costs at landfill (JSC-H&B Operational costs + Disposal costs to operator) (NIS/Ton)	Estimated as part of financial analysis of PPP project.
Total SWM O&M costs	Derived from cost line items above.
Fees recovered from households in both governorates	Based on assumed: number of households, tariffs per household and assumed collections ratio.
Fees recovered from commercial institutions in both	Based on assumed: number of institutions, tariffs per

Parameters	Description
governorates	institution and assumed collections ratio.
Total user fees recovered	Derived from fee line items above.
Other municipal revenue	Based on assumed percentage of gap/shortfall between costs and user fees recovered.
Net Revenue/GPOBA Subsidy Required	Calculated as: total revenue (user fees and other municipal source) – total SWM O&M costs.

Cost Benefit Analysis

The cost benefit analysis conducted covers the time period 2013 through 2018. This time period covers the PPP project for landfill operations, which encompasses the GPOBA project.

Two overall options are analyzed:

- 1) Do Nothing/Status Quo Scenario: this assumes continuation of the present system (primary collection as is (no improvement in level of service/sustainability) and managed by JSCs and M/VCS. Final disposal (transfer stations, long haul and landfill operations) are assumed to be managed by JSC-H&B.
- 2) PSP Scenario: this assumes private operator managing the final disposal operations (transfer stations, long haul and landfill), and continuation of present day primary collection system.
- 3) PSP and OBA Scenario: this assumes private operator managing the landfill operations as well as improvement of SWM services and sustainability of the system, which are supported through the GPOBA mechanism.

The key elements of the benefits and costs of the overall systems for each option are identified and briefly discussed below.

Benefits to the System

Value of SWM Services

SWM user fees collected¹⁷ (households and commercial and healthcare establishments), other municipal sources¹⁸ that are allocated for SWM are used as a proxy for the positive value society (which includes both users and providers) attach to SWM services. In the Do Nothing/Status Quo scenario, neither increase in tariffs nor no improvements in % fee collection are assumed. In the PSP/OBA scenario, both increase in tariffs as well as improvements in % fee collection are considered as developed in the cost model

Reduction of GHG Emissions

The environmental mitigation and design measures that are integral to the construction and operation of a sanitary landfill (e.g. leachate collection, gas capture and flaring, daily cover, etc) will serve to reduce GHG emission from the landfill¹⁹. Reducing GHG emissions can have a positive economic and public

¹⁷ To avoid overstating the value of services, we use the fees that are actually projected to be collected, as we expect some degree of non-payment as shown in the cost model.

¹⁸ It is assumed that “Other municipal sources” contributes approximately 75% and 13% towards the shortfall of user fees in the “PSP” and “PSP & OBA” scenarios respectively.

¹⁹ As compared to unsanitary disposal (e.g. open dumpsites).

health impact (e.g. reduced respiratory diseases such as chronic bronchitis, reduction in lost work days due to illnesses, etc). It is a challenge to monetize such benefits; however, the Social cost of Carbon (SCC) indicator will be used as an estimate of benefits such as increased agricultural activity and improved human health as a result of reduced GHG emissions. The SCC value assumed is \$21/metric ton of CO₂ avoided.²⁰ The table below shows the expected SCC values.

Table 3 Potential SCC from Reduction of GHG Emissions

Year	Baseline Emission From Landfill	Baseline Emissions Avoided from Organics deposited in Landfill	Project Emission from Electricity	Project Emission from Diesel	Emission Reduction	SCC (\$21/metric ton CO ₂)	
	t CO ₂ e	t CO ₂ e	t CO ₂ e	t CO ₂ e	t CO ₂ e	\$	NIS
2014	6,832	2,542	384	1,908	4,540	108,607	407,275
2015	8,448	4,955	384	1,908	6,156	179,378	672,667
2016	10,026	7,248	384	1,908	7,734	260,015	975,057
2017	11,570	9,435	384	1,908	9,278	354,897	1,330,862
2018	13,084	11,524	384	1,908	10,791	423,550	1,588,312

Job Creation/Losses

In order to monetize job creation and losses, the labor requirements of the final disposal system is considered. Given the high unemployment in the West Bank, it is expected that overall, there will be net job creation in the system and thus this component will be a benefit to the system. The salaries earned by workers in the SWM system is used to quantify the value of job creation, however, although we expect to see net job creation overall, some job losses are also expected. As such, a 5% discount is applied to the value of salaries listed in the table below to account for the limited job losses (e.g. jobs lost at Yatta dumpsite).

Estimation of labor requirements for final disposal (landfill, transfer stations and longhaul) was done as part of the due diligence conducted for the PPP project and these estimates are adopted here.

Table 4 Potential Revenues from Job Creation

Component	Salaries (NIS/Year)
Transfer Station and Long Haul	902,400
Landfill	808,800
Total (NIS/Year)	1,711,200

Livelihood of Waste Pickers

²⁰ Source: Technical Support Document: Social Cost of Carbon For Regulatory Impact Analysis Under Executive Order 12866, Interagency Working Group on Social Cost of Carbon, United States Government, February 2010.

Details on the number of waste pickers currently working at the Yatta dumpsite as well as proposed plans for their resettlement have been provided by JSC-H&B in their report ‘Resettlement Action Plan for Waste Pickers and Herdsmen’. The cost benefit analysis of the landfill project²¹ conducted by the World Bank provides an estimate of the economic impact on the livelihood of waste pickers (potential loss of income from current scavenging activities, lower exposure to a hazardous environment, potential to earn higher income as a result of increased education of child scavengers who return to school, adult waste pickers’ developing improved skill set, etc).

The World Bank evaluation provides accentuation factors that are applied to potential waste pickers’ earnings and is used as a proxy for the economic impact of the aforementioned implications, which are presented in the table below. Based on the number of adult workers and children at the landfill (data procured from the ‘Resettlement Action Plan’) and applying the relevant accentuation factors, improvements to the livelihood are monetized and provided below. It should be noted that while the Action Plan considers only a total of 9 children to be currently working at the Yatta dumpsite, we consider all workers aged 17 and below to be children and hence consider total number of children to be 13.

Table 5 Accentuation Factors for Waste Pickers

Accentuation Area	Accentuation Factor Adult (%)	Accentuation Factor Child (%)
Economic Loss of Livelihood	-20%	-20%
Improved Skill Set	+5%	+10%
Financial Revenue Improvement	+25%	+25%
Net Accentuation Factor	+10%	+15%

Table 6 Improvements to the Livelihood of Waste Pickers

Waste Pickers	#	Salary (NIS/Month)	Accentuation Factor	Benefit
Adults	68	1,500	+10%	112,200
Children	13	1,000	+15%	14,950
Total Monthly Benefit				127,150

Avoided Costs of Aquifer Contamination

The avoided costs associated with water treatment due to contamination from unsanitary disposal of waste is estimated and assumed to be a benefit of the project. Following the approach taken by the World Bank²² and adopting conservative assumptions, it is assumed that 5% of the population would be affected by water pollution. Municipalities will need to use more expensive water purification methods to satisfy these people’s demand with good quality water. Costs of water purification might vary greatly depending

²¹ Project Appraisal Document on a Proposed Grant to the Palestinian Authority for a Southern West Bank Solid Waste Management Project, April 2009.

²² Project Appraisal Document on a Proposed Grant to the Palestinian Authority for a Southern West Bank Solid Waste Management Project, April 2009.

on the level of pollution. Taking conservative assumptions, additional cost of purifying ground water is assumed to be (USD 0.03 per m³ water use per capita per year).

Health Benefits Resulting from Improved SWM

As adopted in the World Bank analysis, average health expenditure is used as a proxy for health benefits that result from improved SWM services. However, we adopt a more conservative approach in our analysis (compared to the World Bank), as the World Bank analysis allocates all health costs in the southern West Bank to poor SWM in the Status Quo scenario (\$2.43 million every year). We estimate that up to 40% of these costs could be attributed to the Status Quo (due to diseases transmitted by rodents, insects and other vectors).

Other Benefits – Corporate Tax

This is applicable only for the PSP and PS and OBA cases. Other benefits that will result from the new solid waste management system will come primarily through corporate taxes that will be levied on revenues generated by the private landfill operator. The Corporate tax rate in West Bank is 15% and this has been utilized in the cost benefit analysis.

Cost to the System

The components of the SWM system that are considered as costs are identified and discussed briefly below²³.

Landfill Capital Expenditure Already Incurred

Landfill capital expenditure incurred includes the following items that have already been procured:

- Preliminaries (set-up; mobilization; etc.);
- Siteworks Preparation;
- Cells 1 – 4 Earthworks;
- Cells 1 – 4 Lining and Leachate Collection System;
- Leachate Pond and Leachate Treatment System;
- Buildings;
- Infrastructure; and
- All equipment already procured (Wheel loader, Track loader, 24 Ton Compactor, 36 Ton Compactor, Track excavator, Weighbridge, Diesel Generator)

Additional Capital Expenditure to be Incurred

Additional capital expenditure considered as costs include the following items:

- Final cover costs (Cells 1-4);
- Landfill gas flare and pumping system; and
- Landfill gas collection piping (Cells 1-4).

²³ Capital expenditures have been amortized over the appropriate time period (e.g. capital costs at the landfill such as leachate pond and treatment system are mortised over the life of the landfill).

Operational Expenditure – Primary Collection

Operational expenditures associated with primary collection are estimated by actual O&M costs reported by JSCs and M/VCs for this study. These have been utilized for the cost model as well.

Operational Expenditure - Landfill

Operational expenditures associated with the landfill are estimated by utilizing unit waste management costs identified by IFC. The O&M costs associated with JSC-H&B operations and administration are also included.

Investments - Primary Collection

The only major investments that would need to be made for the period 2013 through 2018 are the purchase of 100 new solid waste bins and 2 new solid waste trucks. These costs are estimated to be about NIS 1,000,000 and would be incurred over 30 months beginning mid-2013.

Environmental Mitigation Costs

Environmental mitigation and monitoring costs have been presented in detail as part of the PPP project due diligence and include laying boreholes for groundwater sampling, air quality sampling, environmental audits, etc.

Start-Up Costs

PPP project start-up costs have been estimated, as part of the due diligence conducted for the project.

IVA Costs

The proposed OBA design involves semi-annual audits by the IVA. The costs estimated for each semester are presented below (assuming one external auditor and one local liaison for each audit).

Semi-Annual IVA Costs

Item	Unit	# days	Cost
IVA Fee	1,000	4	4,000
Local liaison	350	4	1,400
Airfare	3,000	1	3,000
Local travel	200	4	800
Per diem	200	4	800
Total (\$/Audit)			10,000
Total (NIS/Audit)			37,500

Summaries of all the monetized costs and benefits for the various components discussed above for the overall Cost-Benefit Analyses for both options are provided below.

Table 7 Summary of Cost-Benefit Analysis: Do Nothing/Status Quo Scenario

Details	2013 (6 months)	2014	2015	2016	2017	2018 (6 months)
BENEFITS						
Value of Improved SWM Services	7,067,247	15,588,163	17,439,140	19,290,117	12,400,318	20,346,478
Social Cost of Carbon (avoided)		366,547	605,401	877,552	1,197,776	714,740
Job creation	812,820	1,625,640	1,625,640	1,625,640	1,625,640	812,820
Livelihood of waste pickers	686,610	1,373,220	1,373,220	1,373,220	1,373,220	686,610
Avoided costs of aquifer contamination	39,514	81,519	84,060	86,645	89,281	45,984
Health benefits due to improved SWM	1,640,250	3,280,500	3,280,500	3,280,500	3,280,500	1,640,250
NET BENEFITS	10,246,441	22,315,590	24,407,961	26,533,674	19,966,735	24,246,882
COSTS						
Landfill Capex ¹	2,712,904	5,425,808	5,425,808	5,425,808	5,425,808	2,712,904
Additional Capex: Final cover costs (Cells 1-4)						1,216,950
Additional Capex: Landfill gas flare and pumping system						112,500
Additional Capex: Landfill gas collection piping (Cells 1-4)						35,000
OPEX - Primary collection	8,333,246	17,689,363	18,694,438	20,154,519	22,433,973	11,553,837
OPEX – landfill	5,520,129	12,299,965	13,849,613	15,918,326	18,596,161	9,944,553
Additional investments - Primary Collection	333,333	333,333	333,333			
Environmental Mitigation costs (Capex: Boreholes)	15,000	30,000	30,000	30,000	30,000	15,000
Environmental Mitigation costs	68,438	136,875	136,875	136,875	136,875	68,438
NET COSTS	16,983,050	35,915,344	38,470,068	41,665,529	46,622,818	25,659,182
NET BENEFITS - NET COSTS	-6,736,609	-13,599,754	-14,062,107	-15,131,855	-26,656,083	-1,412,300
NPV (NIS)	(59,214,187)					

Table 8 Summary of Cost-Benefit Analysis: PSP Scenario

Details	2013 (6 months)	2014	2015	2016	2017	2018 (6 months)
BENEFITS						
Value of Improved SWM Services	12,149,830	26,764,007	29,636,664	33,460,743	19,262,987	41,366,339
Social Cost of Carbon (avoided)		407,275	672,667	975,057	1,330,862	794,156
Job creation	812,820	1,625,640	1,625,640	1,625,640	1,625,640	812,820
Livelihood of waste pickers	762,900	1,525,800	1,525,800	1,525,800	1,525,800	762,900
Avoided costs of aquifer contamination	43,904	90,576	93,400	96,273	99,202	51,094
Health benefits due to improved SWM	1,822,500	3,645,000	3,645,000	3,645,000	3,645,000	1,822,500
Other benefits -Corporate Tax (15%)	1,246,663	1,042,994	1,211,674	1,314,489	1,492,657	877,903
NET BENEFITS (WITH OBA)	16,838,617	35,101,293	38,410,846	42,643,002	28,982,148	46,487,712
COSTS						
Landfill Capex ¹	2,712,904	5,425,808	5,425,808	5,425,808	5,425,808	2,712,904
Additional Capex: Final cover costs (Cells 1-4)						1,216,950
Additional Capex: Landfill gas flare and pumping system						112,500
Additional Capex: Landfill gas collection piping (Cells 1-4)						35,000
OPEX - Primary collection	8,333,246	17,689,363	18,694,438	20,154,519	22,433,973	11,553,837
OPEX - landfill (PSP)	5,520,129	12,299,965	13,849,613	15,918,326	18,596,161	9,944,553
Start up Costs	231,202	462,405	462,405	462,405	462,405	231,202
Environmental Mitigation costs (Capex: Boreholes)	15,000	30,000	30,000	30,000	30,000	15,000
Environmental Mitigation costs	68,438	136,875	136,875	136,875	136,875	68,438
NET COSTS	16,880,919	36,044,415	38,599,139	42,127,934	47,085,223	25,890,384
NET BENEFITS - NET COSTS (WITH OBA)	-42,302	-943,122	-188,294	515,068	-18,103,075	20,597,328
NPV (NIS) (WITH OBA)	40,534					

Table 9: Summary of Cost-Benefit Analysis: PSP and OBA Scenario

Details	2013 (6 months)	2014	2015	2016	2017	2018 (6 months)
BENEFITS						
Value of Improved SWM Services	8,790,631	20,792,632	25,071,248	30,093,333	36,403,974	21,498,390
Social Cost of Carbon (avoided)		407,275	672,667	975,057	1,330,862	794,156
Job creation	812,820	1,625,640	1,625,640	1,625,640	1,625,640	812,820
Livelihood of waste pickers	762,900	1,525,800	1,525,800	1,525,800	1,525,800	762,900
Avoided costs of aquifer contamination	43,904	90,576	93,400	96,273	99,202	51,094
Health benefits due to improved SWM	1,822,500	3,645,000	3,645,000	3,645,000	3,645,000	1,822,500
Other benefits -Corporate Tax (15%)	1,246,663	1,042,994	1,211,674	1,314,489	1,492,657	877,903
GPOBA Subsidy	5,062,744	9,196,696	7,472,804	5,979,513	2,313,080	0
NET BENEFITS (WITH OBA)	18,542,162	38,326,613	41,318,233	45,255,104	48,436,215	26,619,763
COSTS						
Landfill Capex ¹	2,712,904	5,425,808	5,425,808	5,425,808	5,425,808	2,712,904
Additional Capex: Final cover costs (Cells 1-4)						1,216,950
Additional Capex: Landfill gas flare and pumping system						112,500
Additional Capex: Landfill gas collection piping (Cells 1-4)						35,000
OPEX - Primary collection	8,333,246	17,689,363	18,694,438	20,154,519	22,433,973	11,553,837
OPEX - landfill (PSP)	5,520,129	12,299,965	13,849,613	15,918,326	18,596,161	9,944,553
Additional investments - Primary Collection	333,333	333,333	333,333			
Start up Costs	231,202	462,405	462,405	462,405	462,405	231,202
OBA implementation Costs	37,500	75,000	75,000	75,000	37,500	
Environmental Mitigation costs (Capex: Boreholes)	15,000	30,000	30,000	30,000	30,000	15,000
Environmental Mitigation costs	68,438	136,875	136,875	136,875	136,875	68,438
NET COSTS	17,251,752	36,452,748	39,007,472	42,202,934	47,122,723	25,890,384
NET BENEFITS - NET COSTS (WITH OBA)	1,290,410	1,873,865	2,310,761	3,052,171	1,313,493	729,379
NPV (NIS) (WITH OBA)	8,232,728					

From the two tables presented above, it is clear that the PSP/OBA option is preferable as it present a positive NPV. Furthermore, the abovementioned estimation is a conservative one as there are numerous economic and social benefits that are particularly challenging to quantify and therefore have not been included, such as the aesthetic value if improved cleanliness, the sense of pride in one’s neighborhood, appreciation in land value, etc.

Sensitivity Analysis

The sensitivity of the economic analysis to variations in the key parameters of the system is analyzed. The most salient parameters analyzed are: fee collection and O&M costs. The scenario; however, shows how the overall system is impacted when considerable changes to overall start up costs are considered. All parameters are analyzed for an increase as well as a decrease of 25%. As can be seen from the table below, a 25% change in these parameters affects the Net Added NPV considerably. However, as stated in section B.4, conservative estimates on commercial fees have been assumed whereby commercial fees (both fee levels as well as collection rates) are held constant; however, there is potential for revenue from commercial establishments to grow over the years, which can help address increases in operating costs.

Table 10 Sensitivity Analysis

PSP/OBA Scenario	Base case	25% Decrease in Fee Collection	25% Increase in Fee Collection	25% Decrease in OPEX	25% Increase in OPEX
NPV from project (NIS)	8,232,728	(3,315,131)	19,780,586	41,322,578	(24,857,123)

Annex 3: Outline Service Improvement Plan

Planning Objective					
	Goal	Tasks	Activities	Resource/ Cost Implications	Responsibility
P1	Improve data collection and management	<ul style="list-style-type: none"> Develop and utilize MIS 	<ul style="list-style-type: none"> Prepare RFP for MIS development Evaluate bids and select bidder Align with Financial Information System Implement MIS 	<ul style="list-style-type: none"> Equipment \$7,000 Consultancy \$75,000 	<ul style="list-style-type: none"> JSC-H&B to design, develop and maintain MIS M/VC and all JSCs for collecting, recording and sending required information
Service Improvement Objectives					
	Goal	Tasks	Activities	Resource/ Cost Implications	Responsibility
S1	Optimize waste collection	<ul style="list-style-type: none"> Enhance route optimization for improved efficiency 	<ul style="list-style-type: none"> Evaluate current system Identify gaps and requirements for improvements Develop optimal routing by adjusting routing/scheduling/trucks to provide more efficient and frequent service 	<ul style="list-style-type: none"> GIS/network analyst Operations staff 	<ul style="list-style-type: none"> JSC-H&B staff will run the analysis Cooperation and data will be required from JSC-Hebron, JSC-Bethlehem and M/VCs
S2	Optimize location, quantity and quality of collection bins	<ul style="list-style-type: none"> Conduct a study to identify adequate spacing and numbers of bins for each area, based on waste generation rates and population densities. 	<ul style="list-style-type: none"> Based on the results of the study, design a roll-out strategy for the placement of the bins that coincides with a public awareness and education campaign. Develop maintenance plans for the existing bins, which include regular site visits to keep track of bin locations and conditions OPEX- 2% increase/ year 	<ul style="list-style-type: none"> Operations staff Based on the results of the activities, more collection bins and vehicles are likely to be required. 100 bins 2 vehicles 1,000,000 NIS over 3 years 	<ul style="list-style-type: none"> JSC-H&B staff will run the analysis Operations staff will be required from JSC-Hebron, JSC-Bethlehem and M/VCs
S3	Ensure prompt collection from special areas of concern	<ul style="list-style-type: none"> Small butcher/chicken slaughter shops 	<ul style="list-style-type: none"> Conduct a focused assessment of these commercial establishments. In communication and participation with the owners of these shops, design a strategy to ensure that waste disposal in outside containers aligns more closely with waste pick-up times. 	<ul style="list-style-type: none"> Staff timing GIS/network analysis Operations staff 	<ul style="list-style-type: none"> JSC-Bethlehem and JSC-Hebron, with assistance from JSC-H&B on the GIS data if needed

		<ul style="list-style-type: none"> Avoid waste burning 	<ul style="list-style-type: none"> Provide sufficient collection frequency to avoid excessive accumulation. Work with local authorities to develop and enforce by-laws that ban burning of waste within containers and on open lands. 	<ul style="list-style-type: none"> Integration with regulatory team, analysis team and communications team 	<ul style="list-style-type: none"> JSC-H&B Cooperation and enforcement will be required from JSC-Hebron, JSC-Bethlehem and M/VCs
S4	Improve street cleanliness	<ul style="list-style-type: none"> Educate street cleaners and improve efficiency/impact Inform public to avoid litter Provide sufficient receptacles to avoid littering 	<ul style="list-style-type: none"> Run workshops with frontline staff/workers to ensure improved actions while on their shifts Develop “Avoid Littering” awareness campaign Target improvements in locations with lowest cleanliness indicators Provide street-side small bins on poles where applicable in urban areas 	<ul style="list-style-type: none"> Staff time Communications team 	<ul style="list-style-type: none"> JSC-H&B All waste management staff on-the-ground will be required to participate
S5	Improve environmental best practice	<ul style="list-style-type: none"> Develop detailed plans 	<ul style="list-style-type: none"> Large scale slaughterhouse Medical waste management 	<ul style="list-style-type: none"> Professional input Collaboration with respective Ministries 	<ul style="list-style-type: none"> JSC-H&B Input from JSC-Hebron and JSC-Bethlehem
		<ul style="list-style-type: none"> Ensure closure of unsanitary dumpsites 	<ul style="list-style-type: none"> Provide details plans Confirm closure 	<ul style="list-style-type: none"> Staff time 	<ul style="list-style-type: none"> JSC-H&B Input from JSC-Hebron and JSC-Bethlehem
Raising Awareness Objectives					
	Goal	Tasks	Activities	Resource/ Cost Implications	Responsibility
A1	Public awareness	<ul style="list-style-type: none"> To provide all households with relevant waste management information 	<ul style="list-style-type: none"> Undertake promotion campaign on waste management and 3Rs Align with “Avoid Littering” awareness campaign 	<ul style="list-style-type: none"> Promotional material preparation Use communications staff Awareness program \$7,750 	<ul style="list-style-type: none"> JSC-H&B
A2	Educational development	<ul style="list-style-type: none"> Raise awareness in schools of waste management issues 	<ul style="list-style-type: none"> Prepare an educational pack for inclusion in schools and conduct school visits 	<ul style="list-style-type: none"> Promotional material preparation Use communications staff Communications Program - \$7,750 	<ul style="list-style-type: none"> JSC-H&B
A3	Raising awareness of decision makers and M/VCs	<ul style="list-style-type: none"> To provide M/VCs and other government officials with the necessary awareness 	<ul style="list-style-type: none"> Prepare targeted presentations and workshops to provide information on the fee mechanisms of the SWM strategy and IVA requirements Emphasis should be placed on incentives associated with adherence of 	<ul style="list-style-type: none"> Prepare presentation material Use communications staff Awareness program - \$5,000 	<ul style="list-style-type: none"> JSC-H&B

			the proposed payment structure and penalties of non-payment		
A4	Encourage and promote waste reduction, recycling and reuse (3R)	<ul style="list-style-type: none"> Encourage development of waste recycling facilities Promote waste reduction strategies 	<ul style="list-style-type: none"> Lead private sector workshops to promote interest, investment and awareness possibilities of “waste as a resource” to encourage waste reuse/recycling In line with public campaigns, inform and raise awareness of the benefits of waste reduction 	<ul style="list-style-type: none"> Staff time Communications staff Communications Program - \$7,750 	<ul style="list-style-type: none"> JSC-H&B
A5	Improve regulation and enforcement	<ul style="list-style-type: none"> Work with legislators to create meaningful bylaws and identify enforcement opportunities 	<ul style="list-style-type: none"> Conduct workshops with stakeholders and regulatory bodies to achieve the objective 	<ul style="list-style-type: none"> Regulatory team Staff time 	<ul style="list-style-type: none"> JSC-H&B
Financial Objectives					
	Goal	Tasks	Activities	Resource/ Cost Implications	Responsibility
F1	Standardized Fee Collection	<ul style="list-style-type: none"> Develop standard tariffs and tariff collections 	<ul style="list-style-type: none"> Prepare and open RFP Evaluate bids Assign consultant 	<ul style="list-style-type: none"> \$30,000 consultancy cost 	<ul style="list-style-type: none"> JSC-H&B
F2	Improve fee collection	<ul style="list-style-type: none"> Increase collection of SWM fees from users/municipalities to JSC 	<ul style="list-style-type: none"> Ensure improved service is available is visible Conduct awareness campaigns targeted at both users and M/VCs staff about Project and the need to pay to keep up the service 	<ul style="list-style-type: none"> Awareness Monitoring and reporting in MIS- Improved use of MIS Continuous follow-up 	<ul style="list-style-type: none"> JSC-H&B Collaboration will be required from JSC-Hebron, JSC-Bethlehem and M/VCs
F3	Improve cost efficiency	<ul style="list-style-type: none"> Decrease O&M costs 	<ul style="list-style-type: none"> Use MIS data to compare costs and develop appropriate reports (Goal P1) Use MIS reporting to streamline fuel consumption monitoring (Goal P1) Optimize truck use and truck routes (Goal S1) Continuously monitor staff and suppliers and minimize malpractice by enhancing transparency of transactions, through required reporting to the MIS (Goal P1) 	<ul style="list-style-type: none"> Improvement in management and monitoring Improved use of MIS 	<ul style="list-style-type: none"> JSC-H&B

Annex 4: Financial Management and Disbursement

The current accounting system at JSC–H&B will be used to record, report, and monitor the project’s accounts. The accounting system is computerized and is capable to capture all project-related transactions by component. The system will be used to generate the Quarterly Interim Unaudited Financial Reports (IFRs), while the variance analysis and DA reconciliation statement will be prepared manually using spreadsheets. The JSC – H&B will submit the IFRs to the Bank and IFC within 45 days after the end of each period.

Financial Management

Implementation Arrangements and Staffing: The overall responsibility for overseeing the Project FM and disbursement functions will rest with JSC-H&B, through the existing TOU. The TOU has built solid experience in implementing Bank-supported projects, in particular the on-going SWSWMP, and its performance is considered satisfactory. The JSC-H&B’s financial manager has the educational background and professional experience to manage the FM and Disbursement functions of the OBA Project as he is familiar with World Bank FM and Disbursement guidelines since she is currently handling such functions of the ongoing SWSWMP. Nonetheless, a full time finance officer is required to assist the financial manager in handling the day to day FM arrangements of this project. The finance officer will be hired competitively and according to terms of reference acceptable to the Bank. The finance officer should be hired before signing of the OBA agreement.

GPOBA funds will be transferred to the Designated OBA Account (which is opened by MOF under the Central Treasury Account). GPOBA funds will then be used for payment to the private operator for final disposal services on behalf of M/VCs.

The JSC–H&B, through the existing technical operations Unit (TOU), will continue to manage the financial management and disbursement functions of the Project. The TOU FM team is qualified and experienced, and performance of financial management on the ongoing Project is considered satisfactory. The FM team is comprised of a part time financial manager who has the educational background and professional experience, and is familiar with World Bank FM and Disbursement guidelines. Nonetheless, it is proposed to hire a full time finance officer the IDA financial manager in handling the day-to-day FM arrangements of the OBA project. The finance officer will be hired competitively and according to terms of reference (TOR) acceptable to the Bank. The finance officer should be hired before signing of the OBA agreement.

The current accounting system at JSC-H&B will be used to record, report, and monitor the project’s accounts. The accounting system is computerized and is capable to capture all project-related transactions by component. The system will be used to generate the Quarterly Interim Unaudited Financial Reports (IFRs), while the variance analysis and DA reconciliation statement will be prepared manually using spreadsheets. The JSC – H&B will submit the IFRs to the Bank and IFC within 45 days after the end of each period.

The updated FM assessment concluded that the overall FM risk rating for the proposed Project after mitigating measures is “Substantial”, mainly due to:

- Risk of cost overruns and liquidity shortfalls due to non-delivery of output or insufficient outputs by M/VCs and/or private operator.
- Risk of overestimating subsidiary payment or subsidiary payments are not in line with agreed output.
- Users cannot or will not pay their portion of the service charge.
- Risk of commingling OBA funds with on-going project and other donors’ funds.
- Lack of coordination between JSC-H&B and M/VCs.

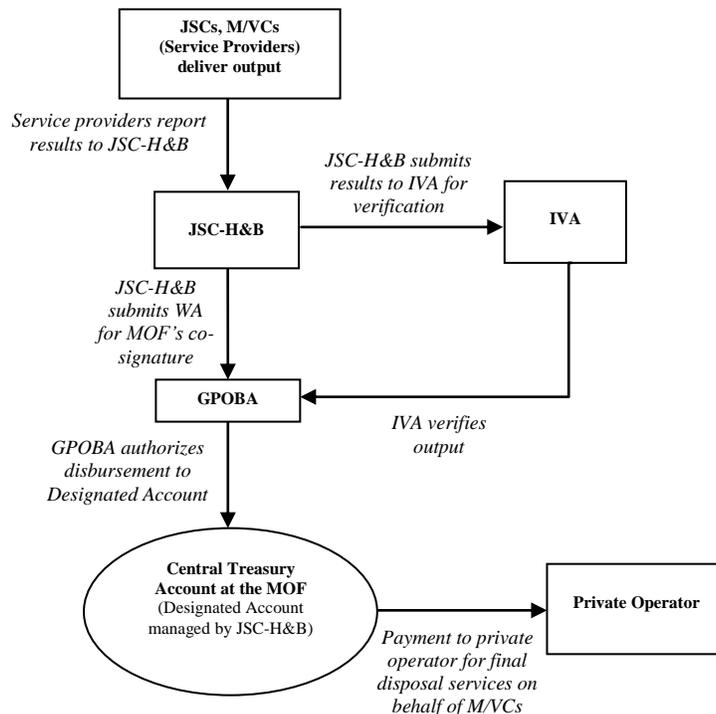
The following measures are designed into the proposed Project to mitigate FM-related risks:

- The OBA subsidy is structured in stages based agreed and reachable outcomes to reduce the working capital outlays to an affordable level.

- OBA disbursement is tied to measurable unit cost (tons), and each payment request is verified by the IVA to ensure that outputs (as contractually agreed), have been delivered to beneficiaries.
- Capacity building and public awareness campaign may improve collections rate.
- A Designated OBA Account will be opened by the MOF under the Central Treasury Account, and will be used solely for this particular project.
- The TOU will assist M/VCS in information collection, accounting and reporting.

Flow of funds: The OBA will be disbursed through a Designated OBA Account opened by the MOF, under the Central Treasury Account (CTA) at Bank of Palestine (Ramallah), and will be operated (managed) by the JSC-H&B. The Designated OBA Account will be denominated in U.S. dollars. There will be no subaccounts under this DA, and reimbursements to the PA for payments made from its own resources will be made to accounts opened under the CTA with adequate safeguards to monitor accounts to which reimbursements would be made. OBA subsidy will be pre-financed by M/VCS and will be reimbursed based on outputs that will be verified by the IVA. Upon verification, MOF will submit withdrawal applications to the World Bank on behalf of the JSC-H&B, and then GPOBA funds will be disbursed directly to the Designated OBA accounts. The JSC-H&B will evaluate the performance of individual M/VCS and will credit them with a portion of the subsidy that corresponds to amount of subsidy received during that period.

Figure 4: Flow of Funds



Verification mechanism: OBA will finance appointing an independent IVA to perform semi-annual verification confirming the scores achieved for each of the indicators, based on a review of technical scorecards and sample on-site verification of the service provided. The IVA will review the MIS records to check that scores have been calculated correctly. Acceptable verification will trigger the payment of the OBA grant directly to the Designated OBA account. If output meets or exceeds the target set for each period, the full subsidy allocated (100%) for that indicator is disbursed. If performance is above the minimum performance level, but below the target level, prorated subsidies are disbursed.

Accounting system and Reporting: Project accounts will be maintained on a cash basis of accounting. The current accounting system (Bisan Enterprise) at the JSC-H&B will be used to account for the proposed

project's transactions. The accounting system is capable to generate the quarterly Interim Financial Reports (IFRs). The Interim Financial Reports (IFRs) will include:

1. Statements of sources and uses of funds for the period and cumulative from Project inception (year to date),
2. Statement of Designated OBA Account reconciliation,
3. Budget Vs actual along with explanations of significant variances between budgeted and actual amounts.
4. Consolidated semiannual subsidy projections as submitted by the participating M/VCS and the projected semiannual allocations,
4. Semiannual actual output report containing number of beneficiary users documented by the IVA report.
5. Narrative progress report linking financial information with physical progress, and highlighting issues that require attention. IFRs will be submitted to the World Bank and IFC within 45 days from the end of each calendar semester.

Internal Control and Internal Audit: The financial control provided by the MOF to all line Ministries does not cover the Local Government Units such as the JSC-H&B. Thus an Internal Auditor "consultant" was hired to perform the required internal control/audit function for SWSWMP. The Internal Auditor is based at the JSC-H&B and report to the Chairman & Council Members of the JSC-H&B and to the MOF. In addition to his current tasks, the internal auditor will be responsible for monitoring internal control over the proposed project. Specifically, the internal auditor will evaluate the reliability of the accounting systems, data, and financial reports. Also, the internal auditor will carry out periodic reviews of project's activities, records, accounts and systems; ensure effectiveness of financial and accounting policies and procedures, as well as ensuring compliance with internal control mechanisms.

Financial Manual: The TOU will update the current SWMP financial manual to reflect all activities of the OBA. The financial manual will include, inter alia: institutional arrangements; chart of accounts; basis of accounting adopted; internal control, planning and budgeting, including cash-flow management; financial reporting, auditing; legal covenants; and records management. Final acceptable financial manual should be submitted to the Bank before signing the OBA agreement.

External Audit: The OBA Agreement will require the submission of audited Project financial statements. The Project's financial statements will be audited annually by a qualified an independent external auditor acceptable to the Bank and in accordance with auditing standards generally accepted. The scope of the audit will be expanded to assess and report on the effectiveness of internal controls and compliance with the OBA Agreement, FM manual, and applicable laws and regulations. Deficiencies and/or weaknesses in the internal control system will be reported through a management letter. The audited financial statements and management letter will be submitted to the World Bank and IFC not later than six months following the end of the project's fiscal year.

The following is the Project financial statements:

- Statement of Sources and Uses of Funds, Showing expenditures (by component) for the period and cumulatively from Project inception.
- A Statement of Designated Account presenting beginning balance, advanced payments, recovery, outstanding payments, and ending balance.
- Disclosure notes to the Financial Statements for significant accounting policies and all other relevant information.

Disbursement: The OBA will be disbursed in accordance with the Disbursement Letter and OBA disbursement guidelines. OBA subsidy will be disbursed to the Designated OBA Account, based on verified outputs, as per the reimbursement method. JSC-H&B will then withdraw the amounts required to pay the service fees due to the private operator on behalf of the respective JSCs and M/VCS. JSC-H&B will submit subsidy disbursement requests together with the IVA reports and IFRs to MOF for co-signature. M&E and verification activities will be paid from the GPOBA DA to consultants and contractors as direct payment.

A Grant Agreement will be signed between the PLO and World Bank/GPOBA. Additionally, the PLO will sign a subsidiary agreement with the PA (MOF), the PA (MOF) will then sign an on-granting agreement, under terms of reference acceptable to the Bank, with JSC-H&B to designate the latter as the implementing agency. JSC-H&B will submit the subsidy disbursement request together with the IVA report to MOF for co signature.

Governance and Anti-Corruption measures: Although it is impossible to eliminate the risk of fraud and corruption, prevention policies and internal control can reduce opportunities for it to occur. Fraud and corruption may affect project resources, thereby negatively affecting project outcomes. The World Bank financial management specialist worked closely with the project’s task team leader to develop with the project team an integrated understanding of possible vulnerabilities and agreed upon the aforementioned risk mitigation measures. In addition, OBA approach is expected to reduce the risks of fraud and corruption that are likely to have a material impact on the project outcomes since OBA is based on the idea of risk transfer, both financial and operational. The notion of reimbursement assumes that M/VCs have financed the project costs as part of the OBA’s risk transfer method.

Supervision Plan: For the purposes of supervision on financial management. The agreed action plans will be closely monitored to ensure appropriate actions are being implemented. Key FM supervision activities will include: (i) reviews of IFRs reports and audit reports; and (ii) participating in supervision missions and keeping the team informed of financial management issues or improvements. The initial supervision will focus on the progress of implementation of agreed actions, and ensuring that sound Financial Management arrangements are in place.

Financial Management action plan:

Action:	Responsibility	When
Submit to the Bank Designated OBA Account authorized signatories, names, and corresponding specimens of their signatures.	H&B JSC	Prior to the receipt of the first withdrawal application (WAs).

Annex 5: Procurement

Procurement under the project will be carried out in accordance with the World Bank “*Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers*” published by the World Bank in January 2011, the World Bank “*Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers*” published by the World Bank in January 2011, and the Grant Agreement. “*Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants*”, dated October 15, 2006 and updated January 2011, shall apply to the project. “Policies and procedures for the selection and use of consultants by World Bank Group for operational work”, namely AMS 15.01 shall apply to the Bank-Supervision component.

GPOBA’s allocation for procurement of goods and services is has been set at US\$250,000 to cover pilot-related expenses for project management, and monitoring and verification activities (IVA, external auditor). A procurement plan (PP) for the first 18 months of project implementation will be prepared and approved by the Bank prior to grant signing.

The overall responsibility for project procurement rests with the JSC-H&B, through the TOU, following the same procurement arrangements in place for SWBSWMP. The TOU has developed adequate procurement capacity through the implementation of SWBSWMP. The TOU employ, on a part-time basis a qualified procurement officer with good knowledge in World Bank procurement and has established acceptable procurement and contract management procedures. The TOU will be responsible for contract management including the review and approval of consultants’ deliverables and the receipt/inspection and acceptance of goods, and for processing payments to the consultants/suppliers in accordance with the signed contracts. Procurement performance rating for SWBSWMP has been satisfactory. A procurement risk assessment was carried out during preparation of the GPOBA pilot to evaluate procurement risks and made recommendations on mitigation measures for efficient procurement under the pilot. The overall procurement risk rating for the project is *low*. A summary of the identified procurement risks and mitigation measures is provide below:

Based on the outcomes of the Country Program Performance Review (CPPR), and the recommended transition to self-selection of external auditors for project implementing entities with existing procurement capacity, the selection of the external auditor and the IVA shall be carried out by the JSC-H&B and closely coordinated with MOF. MOF will be represented in the evaluation committee, and audited financial statements/verification reports will be reviewed by MOF before being submitted to the Bank.

1. Procurement Risks:

- (i) Delays in the procurement and completion of the preparatory technical assistance packages, under parallel financing.
- (ii) Delays in the selection of the IVA could cause disbursement delays.

2. Mitigation Measures: the following actions will be implemented:

- (i) Procurement of the preparatory technical assistance packages are underway and expected to complete prior to project effectiveness.

- (ii) Prior to negotiations, the RFP for the IVA shall be submitted for Bank’s review and approval and the selection process shall be launched immediately thereafter.

3. The overall procurement risk rating for the project is **low**.

Procurement Plan

A number of procurement activities are envisaged under the project. The total allocation for procurement of goods and consultants’ services is US\$250,000, and will finance consultants’ services and small value goods/equipment for project management, monitoring and verification activities, namely an IVA and external auditor. The PP for the first 18 months of project implementation will be prepared and approved by the Bank prior to grant signing. The PP will be updated, with Bank’s approval, at least annually or as needed to reflect actual project implementation needs. The applicable thresholds for procurement/selection methods and the Bank’s prior review thresholds are listed below.

Category	Method of Procurement	Threshold (US\$ Equivalent)	Prior Review Threshold (US\$ Equivalent)
Goods	NCB	<500,000	First contract
	Shopping	<100,000	None
	Direct Contracting	No threshold	All contracts
Consulting Firms	QCBS/QBS	No threshold	First contract
	FBS/CQS/LCS	<300,000	First contract
	Sole Source	No threshold	All contracts
Individuals	IC	No threshold	First contract
	Sole Source	No threshold	All contracts

Short list comprising entirely of national consultants: Short list of consultants for services, estimated to cost less than US\$300,000 equivalent per contract, may comprise entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Under parallel financing, including through the ongoing SWBSWMP, consultants’ services for further development and implementation of waste collection MIS, awareness raising campaigns and capacity building to JSC- H&B and municipalities to support the implementation of SIPs will be procured. Small value waste collection goods/equipment and IT equipment for the MIS may be procured, as well. Furthermore, the JSC- H&B, assisted by IFC as transaction advisor, will procure the services of a private sector operator for the operation and maintenance of Al Minya Landfill and three transfer stations and the transport service between each transfer station and Al Minya Landfill.

Frequency of Procurement Supervision

The Bank’s prior review thresholds were set based on the existing procurement capacity and the identified procurement risks. In addition to prior review, the Bank will carry out two supervision missions per year during which a close follow up and quality control of procurement /contract management matters will be maintained. A post procurement review of contracts which are not subject to the above prior review

requirements shall be conducted once a year. The procurement post reviews should cover at least 5 percent of contracts subject to post review.

Procurement Records

Complete procurement documentation for each contract, including RFPs/bidding documents, advertisements, proposals/bids received, proposal/bid evaluations, letters of acceptance, contract agreements, securities, related correspondence etc., will be maintained by the TOU, in an orderly manner, readily available for audit.

Annex 6: Environmental and Social Safeguards

An assessment of the environment and social risks has been carried out for all the three components of the Southern West Bank SWM project. The first component, and initial project, was developed by the World Bank, and other international donors, to provide both technical and financial support for the construction of landfill at Al Minya in the West Bank. The second component of the project relates to IFC's role as lead transaction advisor to support the JSC-H&B in attracting private sector participation for solid waste management services in both Hebron and Bethlehem governorates. The potential PPP scope includes the operation and maintenance of (i) transfer stations, (ii) long-haul transport of solid waste and (iii) the Al Minya landfill that is under construction (The PPP project). The last component entails an Output Based Aid pilot (OBA Pilot) that contemplates a subsidy targeted at improving primary collection service and fee collections. This subsidy will temporarily offset the cost of solid waste management service for poor households as the efficiency and level of service improves.

The first component of the World Bank financed SWBSWMP (P105404) was approved by Board on May 14, 2009 and become effective on November 25, 2009 and has therefore received E&S clearance. The following documents were produced in this context:

- The Environmental and Social Impact Assessment (ESIA) including an Environmental and Social Management Plan (ESMP) that includes an assessment of all environmental risks and social issues arising from project implementation as well as a mitigation strategy. Issues developed in these documents include (i) health and safety of workers and public who might come in contact with the wastes; (ii) risks associated with groundwater and air quality at the Landfill; (iii) risks of fire/ accidents from Landfill gas/methane; (iv) possibility of loss of income or jobs;
- The Abbreviated Resettlement Plan (ARAP) for waste pickers, herdsman and land owners to address any resettlement issues that result from the construction and operation of the landfill, and if appropriate, the implementation of a Material Recovery Facility and a Composting Plant.

In the context of both the second and third components, the envisaged PPP and OBA pilot, the studies undertaken for the World Bank project component have been reviewed. Specifically, as part of the PPP advisory assignment that is not yet completed, IFC has focused on the additional tasks that the private sector would undertake not fully contemplated under the initial World Bank work and any steps necessary to ensure that these additional tasks are in compliance with IFC Performance Standards. The same approach has been taken with respect to any additional project elements that form a part of the OBA pilot that were not contemplated in the initial WB study. According to the April 2007 guidance, "Application of Bank Safeguard Policies to GPOBA Transactions", IFC's Performance Standards are also appropriate for the evaluation of OBA project components due to IFC's involvement in the project.

The specific key findings from the E&S work undertaken on all project components is summarized below:

Environment

WB Project: A detailed Environmental Assessment as part of the ESIA was carried out by World Bank with respect to the first component of the project, namely the support to the construction of the landfill at Al Minya. The project was classified as Environmental Category: A. Potential adverse environmental impacts associated with the design, construction and operational periods are summarized as follows:

- Potential contamination of the ground water from leachate generated by the decomposition of the municipal waste, the release of odor, the attraction of wild animals, generation of traffic, and aesthetics;
- Potential disturbances to the local villagers.

The ESMP, including mitigation and monitoring measures, entails careful planning, design, and implementing of the mitigation measures that are stipulated in the ESMP specifically designed for this project, and effective supervision of construction and subsequent operational activities. The mitigation actions focus on environmental supervision of the construction contractors, and environmental protection during the construction phase. The monitoring plan provides for controlled air, noise, dust, and water measurements to be used as baseline and trend data to support management decisions. For example, and since the landfill features a double geo-membrane liner, the leachate will be piped to an adjacent specially constructed and lined leachate collection pool. Furthermore, the site should feature a parameter fence and admission will be controlled by a guarded gate. The received waste would also be covered on daily basis to reduce access of flying birds as well as the release of odor. Lastly, a special access road will be constructed to by-pass the small village of Al-Menya and avoid disturbances to the local villagers. The safeguard policy on Environmental Assessment (OP4.01) is triggered by this project. As noted above, and to mitigate any potential negative impacts an ESMP was prepared for the project and has been incorporated in the Project Operations Manual (OM) and any relevant rehabilitation or construction contract has been established and financed by the project. The consultant supervision contract established under this project is responsible to ensure that the ESMP is maintained and adhered to throughout the project implementation. Work Bank financed technical assistance which is supporting the Technical Operations Unit (TOU) in supervising the construction and the operations activities. Furthermore, additional support to municipalities will be provided to enable them improve their waste management generated in their respective communities.

Moreover, the environmental benefits of the project have been confirmed by the ESIA. The project of the constructing and operating the landfill will result in an overall improvement in the environmental quality in the southern West Bank and improvements to the quality of life of the residents in all participating municipalities. In particular, the project aims to reduce random dumping and burning of waste to a minimum. In addition, most of the municipal waste generated in the southern West Bank is expected to be disposed off at the sanitary landfill that is being constructed.

PPP Project: With respect to the PPP project, the scope of the private operator will include the operation of the Al Minya landfill, transfer stations and long-haul transport. The previously conducted WB E&S studies were reviewed to determine whether there were any obstacles to the operation of the Al Minya facility in accordance with IFC Performance Standards. No obstacles were found; however, a review of potential environment risks that may arise from the operation and maintenance of facilities has raised a number of issues for consideration in the operation of these facilities, including: processing and storage, air and GHG emissions, fuel efficiency, community health, safety and security, and resource efficiency during operation.

In order to ensure that the issues above are managed appropriately, it is expected that JSC-H&B must require the successful operator to submit an O&M plan that includes a Health and Safety (H&S) management plan. It should also be a requirement for the successful operator to submit an Environmental Management Plan (EMP) that is based on the ESIA requirements. The submission of these documents should be a required condition for the operator to ensure adherence to IFC Performance Standards.

OBA Pilot: The contemplated OBA pilot is aimed at improving the overall SWM in participating municipalities and addresses by nature environmental concerns. OBA targeted improvements include cleanliness improvements, ensuring waste is disposed sanitarly and improving financial sustainability through increased fee collection, increased billings, and service efficiencies. While general challenges facing achieving these improvements have been identified, further action will need to be taken by municipalities to define specifically any adverse environmental impacts and mitigating actions. However, the following environmental issues have been identified as being associated with the actions that municipalities are expected to take. These include impacts on personnel safety, litter, clandestine dumping, air emissions (dust, bio – aerosols and odors), vehicle emissions, and contaminated runoff. In addition, the issues of medical and slaughterhouse waste is also being specifically tackled through a separate study. In order to ensure that any implementation plans are designed with these considerations in mind, all action plans to support OBA Pilot implementation will need to be developed with reference to the applicable IFC Performance standards, EHS guidelines and the previously prepared WB studies. Further, the OBA Grant Agreement is expected to include language related to the grantee’s obligation to operate, maintain and monitor the project in accordance with both local laws, IFC Performance Standards, and applicable Healthy and Safety Guidelines.

Social

WB Project: Social concerns that arise from the overall project and that are addressed by the ARAP relate any resettlement issues and risks of income loss associated with waste pickers, herdsmen and land owners. Unemployed young men were pressed into waste picking by current deterioration of economic conditions. Indeed, South Hebron represents one of the poorest governorates in the West Bank and suffers from the highest unemployment rate. According to a census carried out by the ESIA team - about 132 waste pickers derive their livelihood from recycling, primarily metal, plastic and glass. Of these, about 44 pickers work full time at the dump site, while the remaining joined their relatives and friends on weekends and holidays, especially when schools was out for summer break. About 36 percent of the waste pickers are children under the age of 16, 32 percent are youth (16-20) and the remaining are adults. Although women do not work at the dumpsite they play a key role separating, cleaning, and repairing the collected items for recycling.

Apart from Yatta, the project also seeks to rehabilitate a number of other uncontrolled dump sites. These 16 dumpsites, a number of which already closed, are in remote locations and of a much smaller scale. Issues related to land ownership and waste pickers at these sites arise as well. The main risk arising from shutting the Yatta dump site is therefore the loss of income for some of the poorest households in the community. In this particular context compensation is understood in a broad sense and includes a number of non-monetary measures. The ARAP was prepared to this end and includes mitigation actions as follows:

- I. Formalize waste picking/separating through a pilot recycling plant at the landfill. This will provide employment with better working conditions (minimize health hazards, reliable income, safe working environment, etc). Workers registration would be required thereby restricting child labor.
- II. Give current waste pickers preferential treatment for hiring under the formalized system. Some of the waste pickers may be employed at the proposed recycling processing facility at the proposed Hebron Waste Transfer Station and at the Landfill facilities.
- III. Provide appropriate training/skills development for both waste pickers and the women in their households in the recycling business to be tested on a pilot basis as described in Project Component 3.
- IV. Include eligible families, especially those with working children, in the DEEP, a national program that helps the poorest households establish businesses by making small soft loans available. Finally, some households could be included in the national Social Safety Net Program, implemented through the Ministry of Social Affairs.

The JSC-H&B with the participation of the municipality of Yatta is finalizing a database of the current waste pickers to ensure that they are included in the proposed interventions identified above. The JSC-H&B has already contracted a Social /Community Outreach specialist to ensure that the above actions are implemented working closely with the surrounding municipalities, concerned private sector and NGOs, and relevant ministries. The Social /Community Outreach specialist will also be responsible for monitoring and reporting on progress on the proposed social risk mitigation measures.

The safeguard policy on Involuntary Resettlement (OP 4.12) is triggered, and the ARAPs) developed to ensure that the treatment of Project Affected People (PAPs) is in compliance with applicable Bank rules and regulations. Specifically, compensation for Land Acquisition and loss of income for waste pickers were anticipated.

Since the project involves construction of sanitary landfill, land acquisition and resettlement issues arise. The identified landfill site is owned by three Palestinian families who have already agreed with the JSC-H&B to long-term lease and/or sale for the purposes of the sanitary landfill. The families do not live on the land, it is currently barren and there is no agricultural or animal husbandry activity in the area that would generate income to the owners. The land on which the access road will be constructed is owned by four Palestinian families who have already agreed with the JSC-H&B to a sale transaction. Again, the families do not live on the land. A Social Committee (SC) has been set up under the JSC-H&B to hear any concerns/disputes with the waste pickers.

With regard to the land proposed for the waste transfer station, the Hebron Municipality owns the plot in question, which is located in its industrial zone of southern Hebron. No existing land users will be displaced and no private land will be acquired, (and there are no issues of loss of income in relation to the site. Anecdotal information of occasional use of the area of both the landfill and the access road by wandering herders has been reported; however, herders can continue to use adjacent open areas in such circumstances. Nevertheless the ARAP discusses their situation. Loss of grazing land would be insignificant as the pasture area is small and pasture growth is seasonal varying from year to year depending on precipitation. The ARAP also discusses the compensation schemes in case evidence of any negative impacts occur related to this project.

In light of the aforementioned E&S findings, the information reviewed to date indicates that the project has been designed in compliance with IFC Sustainability Framework, and the requirements of IFC E&S Review Procedure 11, *Social and Environmental Requirements for Standalone Advisory Services*. IFC's lead specialist has evaluated the project and concluded that adequate conditions have been included in the project to ensure compliance with relevant IFC Performance Standards and applicable Environment, Health and Safety Guidelines.

Annex 7: Results Framework and Monitoring Mechanism

Central to project monitoring is a Technical Scorecard that will serve as performance management tool for the OBA project. Consistent with the project design, acceptable verifications will trigger the payment of the OBA matching grant.

Information on the Technical Scorecard will be reported by JSC-H&B to IVA/GPOBA for monitoring and tracking purposes. The IVA will conduct audits of the scores reported in the technical scorecard.

The technical scorecard is presented below:

Table 2 Indicator 1: Strategy Development/MIS Implementation

Sub-indicators	Characteristics to be evaluated	Weight: Year 1	Weight: Years 2 - 4	Targets (IVA guide/checks)		
				Year 1		Years 2-4
				End of 2013	Mid 2014	
Establishment of institutional framework	Revamped and restructured organization for SWM with adequate participation of all stakeholders	Overall weight of Indicator 1 = 50% of subsidy allocations for Year 1. No compartmentalized weights allocated for Sub-Indicators;	–	Has a special SWM committee been formed? Is the committee charter in place? Have committee members and delegations of responsibility been identified? Has the committee convened its first meeting? Have the minutes of the meeting been documented? Has a dedicated bank account been opened for SWM fees from M/VCs? Are bank documents available for inspection?	Are fees getting deposited in the dedicated account? Are fees getting deposited in the dedicated account?	Regular monitoring of institutional framework, not evaluated for the Technical Scorecard
Implementation of MIS	State of the art information and data management system connecting all areas to a central location with suitable security features in place		–	Have TORs been developed for development of MIS? Have RFPs been released to solicit technology and software providers? Have proposals from technology and software providers been received by JSC? Has a technology provider been selected in a transparent manner? Are components of the MIS getting implemented?	Are more components of the MIS getting implemented? Have any data been managed? Is the full MIS in place with all modules? Are all M/VCs able to connect to a central location? Are suitable security features in place?	
Development of detailed plans to achieve environmental best practices	Development of protocols and Standard Operating Procedures for generators of waste for which procedures are not in place yet (slaughterhouse waste and medical waste).		–	Has development of detailed plans for large scale slaughterhouse waste management begun? Has development of detailed plans for medical waste management begun? Are protocols and Standard Operating Procedures for generators of slaughterhouse waste and medical waste in place?	Are protocols and Standard Operating Procedures being monitored and enforced?	
Development of detailed plans for the closure of unsanitary dumpsites	Detailed plans for rehabilitation of unsanitary dumpsites		–	Have detailed plans for rehabilitation of unsanitary dumpsites been drafted by the committee? Have TORs for the rehabilitation plan been drafted? Have RFPs from technical consultants been released? Have consultants been identified for closure work? Have consultants' proposals been discussed by the committee? Has closure work commenced?	Is rehabilitation work progressing?	
Total		50%	–			

Table 12 Indicator 2: Improvement in Cleanliness of Areas

Indicator and Sub-indicators	Characteristics to be evaluated	Weight: Year 1	Weight: Years 2 - 4	Targets (IVA guide/checks)							
				Year 1		Year 2		Year 3		Year 4	
				End 2013	Mid 2014	Mid 2014	Mid 2015	Mid 2015	Mid 2016	Mid 2016	Mid 2017
Overall cleanliness of streets	Four areas randomly selected (2 in each governorate); CI evaluated for 8 randomly selected streets in each area. The CI will be calibrated based on the results of the baseline study.	15%	20%	TBD through study-	-	CI of 40	CI of 40	CI of 45	CI of 50	CI of 55	CI of 60
Condition of bins	Overall quality of bins (wheels, shell condition, color, wear and tear, etc.)	Monitored, but not evaluated for the Technical Scorecard									
Total		15%	20%	-							

Table 13 Indicator 3: Increase in Total Waste Managed

Indicator	Characteristics to be evaluated	Weight: Year 1	Weight: Years 2 - 4	Targets (IVA guide/checks)							
				Year 1		Year 2		Year 3		Year 4	
				End 2013	Mid 2014	Mid 2014	Mid 2015	Mid 2015	Mid 2016	Mid 2016	Mid 2017
Total waste managed (collection and disposal, diversion for recycling and/or composting)	MIS database for tonnage collected; tonnage diverted, and records from the landfill gate computer system and individual municipalities' records for waste managed	20%	30%	MSW depositions gradually increasing in Al Minya	77% of total waste managed	79% of total waste managed	81% of total waste managed	84% of total waste managed	87% of total waste managed	91% of total waste managed	95% of total waste managed
Total		20%	30%	-							

Table 14 Indicator 4a: Increase in Percentage Fee Collection by M/VCs in Hebron Governorate

Indicator	Characteristics to be evaluated	Weight: Year 1	Weight: Years 2 - 4	Targets (IVA guide/checks)							
				Year 1		Year 2		Year 3		Year 4	
				End 2013	Mid 2014	Mid 2014	Mid 2015	Mid 2015	Mid 2016	Mid 2016	Mid 2017
% SW fee collected from users by M/VCs in Hebron governorate	Total fees collected by M/VCs in Hebron governorate from users under their jurisdiction	9%	15%	46% of total fees collected	50% of total fees collected	54% of total fees collected	59% of total fees collected	64% of total fees collected	69% of total fees collected	74% of total fees collected	80% of total fees collected
Total		9%	15%	-							

Table 15 4b: Increase in Percentage Fee Collection by M/VCs in Bethlehem Governorate

Indicator	Characteristics to be evaluated	Weight: Year 1	Weight: Years 2 - 4	Targets (IVA guide/checks)							
				Year 1		Years 2		Year 3		Years 4	
				End of 2013	Mid 2014	End of 2014	Mid 2015	End of 2015	Mid 2016	End of 2016	Mid 2017
% SW fee collected from users by M/VCs in Bethlehem governorate	Total fees collected by M/VCs in Bethlehem governorate from users under their jurisdiction	6%	10%	54% of total fees collected	57% of total fees collected	60% of total fees collected	64% of total fees collected	68% of total fees collected	72% of total fees collected	76% of total fees collected	80% of total fees collected
Total		6%	10%	-							

Table 16 Indicator 5: Increase in Billings to Cost Ratio

Indicator	Characteristics to be evaluated	Weight: Year 1	Weight: Years 2 - 4	Targets (IVA guide/checks)							
				Year 1		Year 2		Year 3		Year 4	
				End of 2013	Mid 2014	End of 2014	Mid 2015	End of 2015	Mid 2016	End of 2016	Mid 2017
Increase in billings to cost ratio	% billings (by bringing more users under the billing system); tariff increase; reduction in SWM costs (fuel use, general maintenance costs and administrative costs)	–	25%	–	–	76%	77%	78%	78.5%	79%	81%
Total		–	25%	–							

Annex 8: Preparation Team and Costs

Core Team:

Name	Title	Unit
Carrie Farley	Task Team Leader	C3P/IFC
Ibrahim Dajani	Task Team Leader	World Bank
Marwa Al Nasaa	Investment Analyst	C3P/IFC
Alexis Befeno	Investment Analyst	C3P/IFC
SENES/ARIJ	Technical Consultants	External

Advisory Team:

Name	Title	Role	Unit
Esther Loening	Infrastructure Specialist	Advisory	GPOBA
Panel of Experts	Panel of Experts	Advisory	Independent

Project Preparation Costs:

Funds expended to date on project scoping and preparation (external consultants): \$152,980, this has been funded partially through IFC TA funds associated with the PPP due diligence and partially through GPOBA funding.

Implementation support:

Additional TA funds required for project implementation: \$181,250. The table below provides a breakdown and the sources of funding of these costs.

TECHNICAL ASSISTANCE COMPONENT	COST (USD)	FUNDING SOURCE
MIS Development	81,000	IFC Donor TF
Development of Guidelines for SWM Tariff & Fee Collection Systems	30,000	Third Party Donor
Public Awareness and Education Strategies	40,250	World Bank
Consultancy (regulatory & industry specific for Medical Waste Management and Large-Scale Slaughterhouse)	30,000	Third Party Donor
TOTAL	181,250	

Annex 9: Cleanliness Index Methodology

The proposed methodology for assessing and evaluating the Cleanliness Index (CI) for southern West Bank is designed to avoid perception bias and provide quantitative criteria for estimation. It is expected that M/VCs, JSC-H&B, JSCs and IVA will all utilize the same evaluation matrix to determine the CI to ensure that the results are based on a uniform set of guidelines.

The assessment process is adapted from the street survey methodology developed by the charitable organization 'Keep Scotland Beautiful', as part of its 'Local Environmental Audit and Management System Benchmarking Report 2010/11'.

The following guidelines concerning street surveys are provided for each M/VC to adopt:

- All CI assessors (throughout the southern West Bank) are to undergo a workshop/training session every year in order to understand the nuances of the CI indicator for the OBA and to follow set guidelines for the survey;
- At least four randomly selected streets are to be surveyed every week (at least 8 streets to be assessed every fortnight);
- M/VCs are to ensure that previously surveyed streets are not selected again for forthcoming surveys within the same quarter (unless all streets have been assessed at least once);
- At least 100 m of street length is to be assessed during each survey;
- Bi-monthly estimations of CIs (after assessing a minimum of 8 streets) are recommended for each M/VC;
- It is expected that each bi-monthly CI evaluation will identify problems which will be addressed and lead to overall improvements in cleanliness of streets across the M/VCs; and
- The average of the last two bi-monthly CIs are to be reported to the MIS as quarterly CI for each area;

All issues affecting cleanliness for each street assessed are to be recorded on a survey form by the assessor (sample form presented below). As well, specific issues will be identified and relevant recommendations made for action to be taken by M/VCs to address the problems. If deemed necessary, surveyors should interview residents, or commercial establishment staff to identify street-specific problems and solicit solutions.

Identification of Sources of Refuse

It is important to recognize the major source of refuse that affect cleanliness. Typical sources are: individuals, households, businesses, restaurants etc. If a specific problem source is obvious, plans should be made to address the issue: e.g. public education campaign for individuals or households, fines on businesses, requirement of additional bins or private bins for restaurants, etc.

Identification of Types of Refuse

The type of refuse is typically associated with the source of refuse. Even if no association can be made, it is important to understand the types of refuse that affect cleanliness so that suitable steps can be taken to address specific problems: e.g. provision of separate bins for recyclable material.

Identification of Specific Problems and Solutions

Street-specific problems will be identified in order to recommend relevant solutions. Examples of problems affecting cleanliness could include:

- Inadequacy of bins: absence of bins or overflowing bins;
- Bin location not strategic;
- Poor condition of bins;
- Neighboring households not depositing waste properly inside the bins;
- Neighboring commercial establishments not depositing waste properly inside the bins;
- Restaurants and/or commercial establishments in the vicinity generating a lot of waste;
- Requirement of separate bins for recyclable waste (e.g. large quantities of paper from nearby offices);
- Streets are not being cleaned properly/ frequently by M/VC staff;
- Too much flying litter – loose wrappers/ plastic bags; and
- Empty plot being used for garbage disposal.

Under this system, quantitative scores will be allocated to qualitative surveys of randomly selected streets in each M/VC. In order to minimize bias, it is recommended that the same person within each M/VC perform all the cleanliness surveys for the entire evaluation period. Four specific aspects of cleanliness are proposed to be assessed in each street and quantitative scores for each of the characteristics would be allotted. The four characteristics proposed are:

- Presence of waste on street
- Utilization of bins
- Physical condition of bins
- Accumulation of waste

Recommendations for scoring these characteristics are provided below.

Presence of Waste on Street

Score	Description
3	No litter visible on street
2	Less than 15 small items - most likely recently deposited
1	15-30 items of recent origin
0	Several (over 30) items on street, some medium to large items on street - obviously not cleared for a few days

Utilization of Bins

Score	Description
3	Bin(s) not overflowing
2	Bin(s) are full; however refuse left by side of the bin(s) in an organized manner
1	Bin(s) are not full; however refuse strewn around the bin(s) in a haphazard manner
0	Bin(s) overflowing; refuse strewn around bin

Physical Condition of Bins

Score	Description
3	Bin(s) in good condition
2	Bin(s) in fair condition: dented, rusted, needs painting etc., but fully functional
1	Bin(s) in poor condition: wheels broken, falling apart, not fully functional
0	Bin(s) in very bad condition: needs replacement

Accumulation of Waste

Score	Description
3	Clean streets; no visible accumulation of waste
2	Minor accumulation in one location; bags of garbage neatly placed; garbage not strewn
1	Accumulation of construction and/or demolition materials; waste strewn in more than one location
0	Mounds of refuse accumulation in open land/streets

Scores will be allotted for each of the characteristics as proposed above for each street. The CI of the M/VC will be estimated as follows:

- The average of all four characteristics will represent the particular street's score.
- The sum of all individual street scores will then be calculated as the overall score of the M/VC for the survey.
- Maximum score = # of streets surveyed X Maximum possible score for each street.
- $CI = (\text{Actual score} / \text{Maximum score}) \times 100$.

Similarly CIs are to be evaluated for all M/VCs in both governorates.

It is recognized that each area's needs and requirements to maintain cleanliness of streets are bound to be different. For example, Bethlehem municipality will have different requirements owing to the influx of tourists when compared to a rural area like Artas, where frequency of waste collection has been cited to be a problem. However, across all M/VCs, the amount of waste generated and managed will have a direct

bearing upon its cleanliness and therefore waste quantities managed is recommended to be used as a weighting factor to determine the overall CI (referred to as the composite CI) for purposes of the audit.

As an example, if $CI_1, CI_2, CI_3 \dots CI_n$ are the individual CIs assessed for each of the areas of southern West Bank and if $MSW_1, MSW_2, MSW_3 \dots MSW_n$ represent the amounts (TPD) of waste managed these areas respectively, the composite CI for southern West Bank is calculated as follows:

$$CI_{Composite} = [(CI_1 \times MSW_1) + (CI_2 \times MSW_2) + (CI_3 \times MSW_3) + \dots + (CI_n \times MSW_n)] / (MSW_1 + MSW_2 + MSW_3 + \dots + MSW_n)$$

It is proposed that a target CI of 60 for this project to be achieved by the end of Year 4. It is envisioned that as the system evolves and as experience accumulates, Hebron and Bethlehem governorates will be able to achieve CI of 67 or more beyond Year 4.

A sample survey form is shown below for an assessment of eight streets in Bethlehem municipality. Photos of inspected areas will also be attached to the evaluation to help ensure consistency.

Table 17 CI Scoring

Time	Street Name	Survey Details/Location		Scoring Criteria								Additional Comments/ Recommendations	Response Action Taken	Street Score: Average of Individual Scores	
				Refuse on Street		Visibly Strewn	Overflowing Bins		Poor Condition of Bins		Accumulation of refuse				
		Start	End	Score	Major Source	Major Type	Score	Comments	Score	Comments	Score				Comments
10:00 AM	Karkafeh St.	Bethlehem Hotel	Mustafa Souvenir	1	Individuals, households	Cigarette packs, beverage cans; domestic waste in bags	3	-	2	Bin exterior burnt	3	-	Bin too close to Yummy Restaurant - might get overloaded		2.25
11:00 AM	Manger St.	City Mart	Mondo Restaurant	2	Individuals	Cigarette packs, beverage cans	2	Bin overflowing; refuse neatly left by bin side	3	-	0	Garbage accumulation on plot next to St. Mary's school	Additional bin needed to avoid frequent overflow		1.75
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2.5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Overall Score of Area = Sum of all Individual Street Scores															12
Maximum Possible Score for Area = Number of Streets Surveyed X Maximum Possible Score for each Street = Number of Streets Surveyed X 3															24
CI = (Overall Score of Area / Maximum Possible Score) X 100															= 50

Annex 10: Recycling & Composting Considerations

Both feedback from private and public industry actors and technical studies have confirmed there is a domestic market for recyclables in the West Bank. Based on available information, the recoverable materials that can be either sold on the domestic market or exported include paper, plastics and metal. The estimated market potential for paper, plastic containers and metal represents 48.2, 8.8 and 11.6 TPD respectively²⁴. The compost market in the West Bank is estimated at 375,000 Tons per Year (TPY), based on an analysis of agricultural land use²⁵.

However, the prices for recyclables and compost are difficult to estimate with any certainty and are therefore risky. This is particularly true for compost, as producing high quality compost from comingled MSW is challenging and obtaining the green waste necessary to improve quality is difficult in the Southern West Bank where little green waste is generated. Moreover, farmers' awareness level regarding the use of compost is still poor. Importance of the informal sector makes it difficult to have reliable information on selling prices of recovered materials as some recovery is done by waste pickers at the dumpsites. As a result, it is difficult to provide sufficient certainty over future revenues that could support the necessary upfront capital investments associated with large scale recycling and composting activities. As stated earlier, the need to fund these initial capital requirements and the risk associated with possible revenues results in an increased financial burden on J&C-H&B and ultimately the end-users of approximately NIS 22/ton, who cannot currently afford to bear this additional cost on top of increases in SWM fees. Moreover, there are considerable challenges associated with securing additional land needed and the necessary permits. In more developed markets, local authorities could take responsibility for permitting and land acquisition, provide waste quality guarantees and agree to purchase recyclables and compost products; however, these commitments are currently beyond the capabilities of the JSC-H&B.

As a result Recycling and Composting has been excluded from the PPP project scope. Nonetheless, while current circumstances make the implementation of large scale activities challenging at this stage, the PPP structure does allow the Private Operator to implement small-scale recycling, if feasible. Furthermore, JSC-H&B has plans to implement a source separation program to separate paper and plastic waste. Over time, the implementation of such programs will help to define the market prices for such products. Once the market is proven, JSC-H&B could consider the implementation of larger scale activities should they be able to be implemented.

²⁴ SENES, 9 June 2012, Assessment of Current Situation and Analysis of New System”.

²⁵ SENES, 9 June 2012, Assessment of Current Situation and Analysis of New System”.

Annex 11: Technical Assistance

Technical assistance included in the SIPs

1. Development of a Management Information System (MIS)
2. Standardized Fee Collection
3. Public Awareness and Education Strategies
4. Technical/Professional Expert Advice

Development of a MIS

The MIS is a key tool that will ensure that required data is collected, maintained and analyzed. It will also enable standardized reporting that will assist the IVA in the verification process. The following sub-modules are recommended to form the MIS:

- Tonnage sub-module: to monitor details such as daily waste collected from each M/VC, daily waste collected on each route, etc.;
- Fees sub-module: to monitor details such as accounts receivable from each M/VC and actual fees collected from households, etc. This sub-module must be developed in line with the Financial Information Management System of the TOU.
- Logistics sub-module: to monitor details such as number and condition of bins in each M/VC, number and condition of trucks utilized for each M/VC, details of routes for each M/VC, frequency of pick-up, etc.;
- O&M sub-module: to monitor details such as operational costs, including salaries, fuel, oil change, procurement of spare parts, tires, general maintenance of vehicles, electricity, water, administrative overheads, uniforms, staff training, building and equipment maintenance, personnel protection equipment and other purchases; and
- Reports sub-module: to provide ability to collate information from the other sub-modules and provide periodic reports on the overall SWM system so that areas for improvement can be easily identified.

To develop and implement the MIS, the following steps should take place in the first 3-5 months of the project:

- Preparation of RFP for MIS development
- Evaluation of bids and select bidder
- Piloting and rolling-out the MIS ensuring alignment with the TOU's Financial Information Management System

The development of the MIS is expected to take 2-4 months. A consultancy will likely be required to assist the TOU in developing and rolling out the MIS, estimated to be worth \$75,000, including limited equipment (i.e. two computers, data server for around \$6,000).

Standardized Fee Collection (Guidelines for SWM Tariff and Fee Collection Systems)

It is important to develop a standardized system of tariff setting and fee collection that includes effective mechanisms for solid waste fees collection from users that aim at targeted levels of cost recovery. An RFP (\$30,000) is currently underway to prepare Guidelines for SWM Tariff and Fee Collection Systems, the results/recommendations of which should be completed during the first year of the project, upon which recommendations are to be implemented over a one year period, with the view to achieve the first OBA Targets for the fee collection and cost recovery indicators as set for year 1 of the GPOBA project. The two key requirements for such a system are:

- Prepare a guide for the usable methods and alternatives to determine solid waste fee levels to cover costs
- Develop a system that includes effective mechanisms for solid waste fees collection from users

The first objective of this study is to identify principles of cost calculation for solid waste collection, transport, treatment and final disposal. Guidelines shall be prepared in order to specify what costs must be part of the SW fees, which further costs are allowed to be covered by fees, and which costs are to be subsidized from other sources.

The second objective of this study is to identify possible options for SW tariff systems for the Palestinian Territory to cover the costs.

Public Awareness and Education Strategies

Three education campaigns (will be implemented in Year 1 and 2. A consultant will be recruited to support this sub-component (consultancy estimated at \$7,750) by providing the following services:

- Identification, design and implementation of appropriate public awareness campaign (including identification or appropriate communication tools, e.g. flyers, workshops, TV/radio spots, posters, billboards, etc.)
- Development of a dedicated educational programs for primary and secondary schools

The cost of implementing the campaigns is expected to cost about \$22,500 including the production of the communication materials.

Technical/Professional Expert Advice

This component will provide regulatory and industry specific (Medical Waste Management/Large Scale Slaughterhouse) professional expert advice on an as-needed basis. Costs of about \$20-30,000 have been estimates (including consulting services and travel expenses)

Annex 12: Detailed OBA Disbursement Calculations

The methodology for calculation of the OBA is described in this section. Based on the subsidy requirements presented in Section [B.4](#) subsidy disbursements for each year are summarized below.

Table 18 Estimation of Yearly OBA Disbursements

Period/Disbursement date	Amount US\$
Year 1 (1/2): January 2014-July 2014 (1st disbursement January 2014, 2 nd disbursement July 2014)	2,576,291
Year 2: August 2014-July 2015 (3 rd disbursement January 2015, 4 th disbursement July 2015)	2,222,600
Year 3: August 2015-July 2016 (5 th disbursement January 2016, 6 th disbursement July 2016)	1,793,642
Year 4: August 2016-July 2017 (7 th disbursement January 2017, 8 th disbursement July 2017)	1,414,090
Total	8,006,623

The allocations for each indicator during every audit by the IVA are derived by utilizing the weights for each indicator. As an illustrative example, calculations for OBA subsidy allocations for Indicator 1: Strategy Development/MIS Implementation are described below:

- Total subsidy as OBA requested for 2013 is \$1,350,065;
- OBA subsidy requested for 2014 is \$2,452,452;
- Year 1 for the GPOBA project comprises of the 2nd half of 2013 and the first half of 2014;
- Therefore, total subsidies available for the 2 audits for Year 1 are:
 - \$1,350,065 (full amount indicated for 2013); and
 - \$1,226,226 (half of the amount indicated for 2014)
- Weight of 50% has been assigned to Indicator 1 for Year 1;
- Hence, 50% of the total subsidies for each audit in Year 1 (End-2013 and Mid-2014) are allotted for this indicator:
 - 50% X \$1,350,065 = \$675,033 for End-2013; and
 - 50% X \$1,226,226 = \$613,113 for Mid-2014

Subsidy allocations for each indicator were calculated for verification period as follows:

Table 19 Subsidy Allocations for Indicators

Indicator	Weights		Subsidy Allocations (\$)							
			Year 1		Year 2		Year 3		Year 4	
	Year 1	Years 2-4	H1 FY14	H2 FY14	H1 FY15	H2 FY15	H1 FY16	H2 FY16	H1 FY17	H2 FY17
Strategy development/MIS implementation	50	–	675,033	613,113	–	–	–	–	–	–
Improvement in cleanliness	15	20	202,510	183,934	245,245	199,275	199,275	159,454	159,454	123,364
Increase in total waste managed	20	30	270,013	245,245	367,868	298,912	298,912	239,181	239,181	185,046
Increase in % fee collection by M/VCs in Hebron governorate	9	15	121,506	110,360	183,934	149,456	149,456	119,590	119,590	92,523
Increase in % fee collection by M/VCs in Bethlehem governorate	6	10	81,004	73,574	122,623	99,637	99,637	79,727	79,727	61,682
Increase in billings to cost ratio	–	25	–	–	306,557	249,093	249,093	199,317	199,317	154,205
TOTAL YEARLY SUBSIDIES NEEDED (\$)			2,576,291		2,222,600		1,793,642		1,414,090	
% OF TOTAL SUBSIDY NEEDED YEARLY			32%		28%		22%		18%	
TOTAL SUBSIDY NEEDED (\$)			8,006,623							