



## 1. Project Data

Project ID  
P089926

Project Name  
AR Solid Waste Management Project

Country  
Argentina

Practice Area(Lead)  
Social, Urban, Rural and Resilience Global Practice

L/C/TF Number(s)  
IBRD-73620

Closing Date (Original)  
30-Jun-2012

Total Project Cost (USD)  
54,380,000.00

Bank Approval Date  
28-Feb-2006

Closing Date (Actual)  
30-Jun-2015

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	40,000,000.00	0.00
Revised Commitment	40,000,000.00	0.00
Actual	39,463,806.91	0.00

Sector(s)

Waste Management(83%):Sub-National Government(8%):Central Government (Central Agencies)(6%):Social Protection(3%)

Theme(s)

Pollution management and environmental health(29%):Environmental policies and institutions(29%):Climate change(14%):Administrative and civil service reform(14%):Social Inclusion(14%)

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## 2. Project Objectives and Components

### a. Objectives

The project's development objective (PDO) is "to improve public health and quality of life by reducing the exposure of the Borrower's population to pollutants and disease vectors from solid waste." (Loan Agreement dated December 29, 2015, Schedule 2, page 18)

For the purposes of this IEG assessment, the achievable and measurable objective that corresponds to the project's actual activities and implementation timeframe is "to reduce the exposure of the Borrower's population to pollutants and disease vectors from solid waste", which, if achieved, would contribute over the long term to the over-arching, higher-level goal of improving public health and quality of life.



b. Were the project objectives/key associated outcome targets revised during implementation?

No

c. Components

The project had three main components:

Component 1: Policy and Institutional Strengthening

(US\$4.9 million at appraisal; US\$9.67 million actual)

The key objectives of Component 1 were to: (a) finance technical assistance (TA) for the agencies involved in the development and control of sector policies and regulations; (b) strengthen the national institutional capacity of the Secretariat for Environment and Sustainable Development (SAyDS) to implement the project; and (c) at the local level, support the capacity of local authorities to make informed decisions and develop sustainable solid waste management services. The component would also support the government's long-term planning for solid waste management incorporated in the National Solid Waste Management Strategy. Activities financed under this component were (a) strategic planning and regionalization; (b) training program on solid waste management and urban finances fundamentals; (c) technical studies; (d) public communication and outreach programs; and (e) project management and monitoring and evaluation (M&E).

Component 2: Construction of New Landfills and Closure of Open Dumps

(US\$31.5 million at appraisal; US\$29.15 actual)

The component was to finance the (a) construction of environmentally and economically sustainable final disposal facilities and (b) closure and remediation of existing open dumps. It would also cover infrastructure and equipment for separation and recycling activities as part of the social inclusion plans (Component 3). The project would finance composting activities only if a technical and economic study provided by the municipality demonstrated the sustainability of the enterprise. A set of eligibility criteria was developed to identify provinces and municipalities that could participate in this component.

Component 3: Social Inclusion

(US\$1.5 million at appraisal; US\$0.54 actual)

This component intended to implement social inclusion plans for the waste pickers working only at the dumpsites being closed or rehabilitated by the activities under Component 2 and in the cases where needed. It was also intended to strengthen national and local capacity to assess and manage complex social issues around the implementation of solid waste management interventions. Activities to be financed were (a) capacity building in social inclusion and management; (b) TA for microenterprises and cooperatives; and (c) private-public partnerships.

d. Comments on Project Cost, Financing, Borrower Contribution, and Dates

Project Cost. The total project cost was estimated at US\$40 million at appraisal (including an unallocated amount of US\$2.0 million and a front-end fee of US\$0.10 million). The actual cost was US\$39.46 million, of which US\$29.15 million was allocated for the construction of new landfills (US\$27.13 million) and the closure of open dumps (US\$2.02 million). The remaining amounts were allocated for activities related to institutional strengthening (US\$9.67 million) and social inclusion (US\$0.54 million).

Financing. Disbursement was considerably delayed, reaching only half of the loan amount by the original project closing date. Of the actual project cost, the World Bank financed US\$37.87 million.

Borrower Contribution. The Borrower financed US\$8.05 million of the actual project costs.

Dates. The project was approved in February 28, 2006. Loan effectiveness, which occurred on February 1, 2007, was delayed by almost one year. A mid-term review was carried out in September 12, 2011. The original closing date was June 30, 2012; after two extensions totaling 3 years, the actual closing date was June 30, 2015. There were 6 project restructurings, as follows:

- December 10, 2007: To allow provincial and municipal governments to provide their counterpart funding in the form of civil works.
- October 22, 2008: To reallocate loan proceeds to allow purchase of equipment and construction of recycling points.
- December 18, 2008: To reallocate loan proceeds to permit procurement of the supervision contract for works.
- January 31, 2012: To extend the closing date/
- October 8, 2013: To reallocate loan proceeds to allow completion of works in Mendoza and Rosario, and to extend the closing date.
- May 5, 2015: To reallocate loan proceeds to allow finalization of works in Mendoza and continuation of the PIU.



### 3. Relevance of Objectives & Design

#### a. Relevance of Objectives

Relevance to the Government's Objectives. At the time of appraisal in December 2005, the project's objectives were fully consistent with the National Solid Waste Management Strategy adopted by the Government of Argentina (GOA) in 2005. The strategy, which was prepared as part of the Bank-financed Pollution Management Project, placed strong emphasis on providing tangible, cost-effective solutions to the solid waste management (SWM) problems in Argentina. At project closure, the project's objectives remain highly relevant to GOA and the broader public. GOA is continuing to implement a socially inclusive program to expand the treatment and disposal of solid wastes in Argentina, with annual funding of about US\$60 million per year. The SWM sector remains a top priority for the Secretariat of Environment and Sustainable Development (SADyS), which at the time of the ICR was rehabilitating the National Observatory for Solid Wastes. These actions enjoy wide public support: A 2014 survey found that the majority (73 percent) of Argentina's population rank solid wastes as the third most important environmental issue, out of 13 issues.

Relevance to the Bank's Objectives. At appraisal, the project's objectives were consistent with the April 2004 Country Assistance Strategy (CAS), specifically its pillars of sustained economic growth with equity, social inclusion, and improved governance. Currently, the project's objectives remain substantially relevant to the Bank's 2014 Country Partnership Strategy (CPS), which includes among its strategic objectives the expansion of sanitation services for the population, and a focus on urban agglomerations and the poorest provinces in the country. The SWM program's strong focus on social inclusion has grown in relevance given the current Bank and government priorities, which emphasize (i) reaching the poorest and most vulnerable members of society, and (ii) generating replicable examples that can support urban agglomerations and be adapted to poorer areas and populations.

Rating

High

#### b. Relevance of Design

The project's components and activities—namely, construction of sanitary landfills, closure of open dump sites, training, technical assistance, and institutional strengthening—do have a logical and direct link to the reduction of exposure to pollutants and disease vectors from solid wastes. These, however, need to work together and be well coordinated. The project's innovative design did have an integrated approach, covering the management, financial, technical and environmental and social aspects. Most notable is its emphasis on the social inclusion of informal recyclers. The project also introduced contractual models that included shared landfills and private sector contracts based on the design-build-operate models, which allowed municipalities to tap the expertise of the private sector.

The post-restructuring Results Framework, however, has some weaknesses, having shifted more toward measuring outputs rather than outcomes. This is most notable in the area of training, where the measurement of performance was restricted to numbers of staff trained without going further to assess the adoption of new policies and practices, and/or the application of new knowledge gained. More broadly, some of the original PDO indicators related to "risk reduction" were nearer to being *outcome* indicators and thus better measures of PDO achievement, but these were dropped during restructuring and replaced with *output* indicators, i.e., numbers of physical facilities or training participants. The original Results Framework itself (Project Appraisal Document [PAD], Annex 3, page 40) was also speculative and overly ambitious by prematurely citing the promotion of Carbon Finance despite the lack of demonstrated success of SWM programs in Argentina and the low institutional capacity at the time of appraisal. On balance, despite these minor shortcomings, the relevance of design is rated substantial.

Rating

Substantial

### 4. Achievement of Objectives (Efficacy)



## Objective 1

### Objective

To improve public health and quality of life by reducing the exposure of the Borrower's population to pollutants and disease vectors from solid waste.

### Rationale

The project's outputs and outcomes are as follows:

#### Outputs:

- The targeted number of 10 sanitary landfills was exceeded. 11 landfills and complementary facilities such as transfer stations and separation plants were constructed in Mar del Plata, Chubut and Mendoza. A compost plant was constructed in Rosario.
- The targeted percentage of solid waste disposed in the new sanitary landfills (as a proportion of the total estimated solid waste generated by the municipalities) was exceeded, i.e., 98 % achieved compared to the goal of 85 %.
- The project reached around 3.5 million beneficiaries, exceeding the revised target by about 1 %. The population served were in the following areas: Mar del Plata, Rosario, Virch-Valdés (Trelew, Dolaivon, Gaiman, Puerto Madryn, Rawson), Mendoza (Rivadavia, San Martin, La Paz, Santa Rosa).
- The targeted number of female beneficiaries (1.8 million) was also nearly reached at a 99 % level in those same areas cited above.
- Twice the number of targeted solid waste management plans were prepared. Compared to the target of 6 plans, 12 were actually prepared across 6 provinces and 6 municipalities.
- 263 municipalities received technical environmental, social and/or financial capacity building, compared to the original target of 80.
- Almost 3 times the targeted number of municipal staff actually received training, i.e., a total of 728 municipal staff received technical and financial management training compared to the originally targeted total of 254; overall, 588 financial workshops and 140 technical workshops were conducted under the project.
- The targeted number of provinces that implemented public communications programs was exceeded: 7 provinces participated compared to the original target of 6.
- The number of open dumps that were closed or rehabilitated (52) vastly exceeded the original target of 3 open dumps (note, however, that these include the micro dumpsites in Cordoba, which were much smaller than originally targeted by the project).
- However, the targeted area of 50 hectares of contaminated dump sites to be closed was less than half achieved, as only 23 hectares of such sites were closed.
- Moreover, 0.9 million metric tons of industrial and municipal waste disposal capacity was created, compared to the target of 1.1 million metric tons. (Note that the 2013 restructuring introduced this Bank core indicator.)
- The implementation of Social Inclusion Plans was almost fully met: 4 were implemented compared to the original target of 5 plans.
- The targeted number of informal recyclers that were integrated into formal activities of the municipalities' sanitary landfills and separation plants was only partially achieved—275 were integrated compared to the target of 360.

#### Outcomes:

- 98 % of the population in the municipalities that participated in the project have an adequate final disposal, which exceeds the original target of 85 %. The ICR claims that this resulted in "significantly reducing the exposure of the population to pollutants and disease vectors from improperly disposed solid waste." (ICR, page 34, paragraph 63) However, this observation was not based on actual risk reduction measurements that were compared to a baseline.
- Of the total number of municipalities that participated in the training workshops on financial sustainability and solid waste management, 92 % are implementing the economic and financial matrix learned in the workshops. This represents an almost full achievement of the 94 % target.
- The average number of months from the call for proposals to the signing of contracts has decreased to 7 months, compared to the target of 11 months.
- 10.2 % of the total amount of waste that enters the recycling facilities/ separation plants is being recycled, thus slightly exceeding the targeted amount of 10%.

Given (i) the achievement of physical and capacity-building outputs that met or exceeded their targets; (ii) the large geographic areas and numbers of people benefitting from proper solid waste disposal; and (iii) the demonstrated behavioral changes and newly adopted practices indicated above as project outcomes, the ICR's conclusion appears valid that the reduction of exposure to pollutants and disease vectors



from solid wastes (i.e., the PDO) has been achieved within the project population, while noting that results measurement was mainly oriented toward outputs rather than outcomes, and stronger measures of institutional strengthening are still required. On this basis, efficacy is rated **substantial**.

Rating  
Substantial

## 5. Efficiency

Economic efficiency. Cost-effectiveness analysis was carried out for the *solid waste disposal systems*, calculated on the basis of the investment and operating cost of managing one ton of solid wastes. The cost comparator was the Colombian experience with comparable systems. The results were mixed. The cost of the transfer, transport and disposal system for Virch-Valdes, for example, was almost the same as the Colombian comparator, while the one for Mendoza was higher or less cost-effective. The disposal system cost for Mar del Plata was lower than the comparator. Benefit-cost analyses were conducted for the *composting and separation plants*. The costs comprised the investment and operating costs, while the benefits included avoided landfill costs, sale of recyclables, and reduction in greenhouse gas emissions. Health benefits to recyclers were also taken into account. The EIRRs ranged from 17% in Virch-Valdes to 31 % in Mar del Plata and 57% in Rosario. (Note that an EIRR was not available at appraisal, as the PAD conducted mainly a cost-effectiveness analysis vis-a-vis other comparators and a diverse set of assumptions regarding disposal and recovery rates.)

Operational Efficiency. The project had to be extended by 3 years due to lack of readiness and implementation delays. At appraisal, a ready pipeline of sub-projects that had already been vetted as meeting the eligibility criteria for financing under the project was not available. Most municipalities found it difficult to meet those criteria due to lack of technical and procurement capacity, which in themselves slowed implementation. Loan effectiveness was delayed by a year due to delays in submitting the approval decree for the Loan Agreement. The Project Implementation Unit had limited technical and procurement capacity, thus causing lags in the initial tendering of works. There were also significant delays in the social inclusion component, resulting from the lack of knowledge of proven approaches for both the Bank and the Government. Finally, while recognizing the large number of interventions over wide geographic areas, the institutional strengthening component had an actual cost that was about twice the appraisal estimate; the ICR, however, did not provide sufficient details on the cost-effectiveness of these interventions or comparators with similar programs elsewhere.

From the Bank's side, the annual supervision cost was about US\$112,000 per year, which is significantly higher than supervision coefficients in other projects. The total supervision cost over 11 fiscal years exceeded US\$1.23 million.

Efficiency Rating  
Modest

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal		0	0 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	17.00	30.00 <input type="checkbox"/> Not Applicable

\* Refers to percent of total project cost for which ERR/FRR was calculated.

## 6. Outcome



Given its close alignment with Bank and Government strategies, the relevance of the project's objective is rated **high**. The relevance of its design is also **substantial**, although there were some minor weaknesses in its Results Framework, specifically the tilt toward output-oriented indicators after project restructuring. The project's efficacy is **substantial**, while noting weaknesses in outcome measurement, which partly stems from the aforementioned weaknesses in the Results Framework and its indicators. While the EIRRs for the composting and separation plants were high, the cost-effectiveness of the solid waste disposal systems (the main project component) was mixed; moreover, there were long delays and significant operational inefficiencies that eventually led to a 9-year implementation period. Thus, efficiency is rated **modest**. Overall project outcome is rated **moderately satisfactory**.

- a. Outcome Rating  
Moderately Satisfactory

## 7. Rationale for Risk to Development Outcome Rating

Political risks are low. Following the national elections in Argentina in November 2015, SAyDS was upgraded to a Ministry but will no longer be directly under the Cabinet of Ministers. Despite this restructuring, the activities of the National Urban Solid Waste Management Unit under SAyDS are not expected to be reduced or lose priority, based on the track record of previous major political changes that have not had any significant effect on the Unit's operations. Risks are also low with respect to the efficient operations of the landfills being administered under operation contracts with private companies. However, risks are relatively more significant for the Social Inclusion Plans and alternative occupations for recyclers, given political changes resulting from recent local elections, the uncertainty in recycling prices, and broader sustainability issues. These social risks could be mitigated through continued technical assistance and advice in adapting and institutionalizing the design of SWM programs to match changing local realities. The National Urban Solid Waste Management Unit is also planning to continue its yearly monitoring visits to assess the status of local SWM projects, including social aspects.

Higher up the risk scale, there are significant risks that the municipalities would not make the recurring payments to the operators on time. When this occurred in Chubut, the provincial government intervened as guarantor to the operator and retained municipal transfers, which resulted in the municipalities starting to make payments. This risk could be mitigated through this type of provincial government intervention, as well as technical assistance provided by the National Urban Solid Waste Management Unit on budget calculation and tariff design. A high risk is that the landfill gas flaring system in the Mar del Plata landfill would not be effectively used as designed, since reliable data has not been obtained for the gas flow, hence it is not clear if the capacity of the constructed landfill gas flaring facility is appropriate for the volume of gas production. (See also the last sentence on Section 8(a) below.)

The two latter risks are significant, leading to an overall rating of **substantial**.

- a. Risk to Development Outcome Rating  
Substantial

## 8. Assessment of Bank Performance

- a. Quality-at-Entry

Bank quality at entry was moderately unsatisfactory. The project design was innovative but ambitious given the country conditions and untested SWM sector. The project's first years were hobbled by significant delays due to its lack of readiness for implementation. Guidelines for implementation were weakly defined and had to be adjusted during the project's initial phases. The eligibility criteria for the subprojects were useful but difficult for the local governments to achieve within a short period of time, given their low technical capacity. Thus, the Bank should have been more proactive in helping identify and prepare a sufficient number of sub-projects that already met the eligibility requirements at effectiveness. Moreover, given the ambitious design, more intensive technical assistance should have been provided at entry on technical and procurement issues specifically to strengthen implementing units. For example, the social inclusion component, which was known to be a critical component from the start, received inadequate attention in the years immediately following loan effectiveness. The results framework was also overly focused on the carbon finance component, yet lacked the necessary baselines for its effective monitoring. Although the inclusion of carbon financing was innovative, it was supply driven—pushed by the Bank although it did not have GOA's full commitment and ownership. Moreover, the requirement to include landfill gas flaring facilities in landfill bids was not realistic, given the typical time period for gas extraction and for obtaining accurate capacity estimates based on actual gas flow.



Quality-at-Entry Rating  
Moderately Unsatisfactory

**b. Quality of supervision**

The Bank project team demonstrated diligence and consistency in addressing the implementation delays. During 2007 and 2008, the Bank team conducted supervision missions every four months, and video conferences with the Project Implementation Unit (PIU) every two weeks. A local consultant was hired to support the PIU team. Moreover, albeit late, the Bank agreed to finance the studies and activities required to facilitate compliance with the subprojects' eligibility criteria. The Bank also assisted in strengthening the PIU, particularly in the areas of procurement, financial management, and social inclusion issues, for which supplementary trust funds were mobilized. The Bank team was effective in monitoring progress, using the project's M&E framework that was modified in 2013 (as a result of the 2011 mid-term review) to better reflect the project's objectives of the project. The need to modify the indicators became evident in light of the delays in defining the actual subprojects and in reviewing other solid waste management experiences. The Bank's management and project team demonstrated the patience and supportiveness required to sustain the incremental process of developing local capacity and accumulating the necessary experience at the local and national levels. This was achieved despite the frequent change of task team leaders (TTLs), i.e., four TTLs over the nine years of implementation, or a new TTL every two years or so.

Quality of Supervision Rating  
Satisfactory

Overall Bank Performance Rating  
Moderately Satisfactory

## **9. Assessment of Borrower Performance**

**a. Government Performance**

Although the Government's ownership of the project's objectives was strong during preparation and implementation, political changes and institutional realignments resulted in implementation challenges and delays. For example, the conversion of SAYS into a ministry, its removal from the purview of the Cabinet of Ministers, and the change in the Environment Secretary resulted in a delay in the signing of the Loan Agreement. Consequently, effectiveness was also delayed by one year after Board approval. The Environment Secretary was changed six times during the nine years of project implementation. Overall, however, the SWM sector has been and remains a national priority.

Government Performance Rating  
Moderately Satisfactory

**b. Implementing Agency Performance**

During the initial years of project implementation, the PIU was inadequately staffed and had very weak capacity, particularly in procurement and specialized technical skills. Over time, however, it was able to improve its performance, and eventually became a strong national unit that is responsible for implementing the national solid waste investment program. This was achieved through a professionalization and capacity-building effort that was geared toward enhancing its abilities to perform internally and independently many of the project's activities, instead of outsourcing them. Despite the six different PIU coordinators during the project period, the PIU was also able to mobilize significant financing and become the national authority for the sector, while gaining some international recognition as well.

Implementing Agency Performance Rating  
Moderately Satisfactory





Overall Borrower Performance Rating  
Moderately Satisfactory

## 10. M&E Design, Implementation, & Utilization

### a. M&E Design

The ICR (page 28) indicated that as implementation progressed, several indicators that were in the original M&E framework became irrelevant. As examples, original PDO indicators were related to groundwater pollution, but this proved difficult to measure given the absence of baseline data and the limited life span of the project. Since the subprojects were also not yet fully defined, most of the original indicators for both the project objectives and components could not be assigned a target value. The M&E framework was reviewed as part of the 2013 restructuring, during which new indicators were established to better reflect the project's objective and the activities. Moreover, target values were also assigned for all indicators. These adjustments in the initial indicators helped to enhance consistency with the sub-projects as and when the latter were identified and finalized during implementation. Nonetheless, one weakness is that some of the original PDO indicators related to "risk reduction" were nearer to being *outcome* indicators and thus better measures of PDO achievement, but these were dropped during restructuring and replaced with *output* indicators, i.e., numbers of physical facilities or training participants. These changes limited the effectiveness with which achievements against the PDO could be measured.

### b. M&E Implementation

The National Urban Solid Waste Management Unit used the indicators to monitor the project and developed a specific tool to improve monitoring, according to the ICR (page 28). The Unit conducted six visits during the first year of operation of the facilities to assess the technical, legal, financial, institutional, environmental, social, awareness-raising and planning aspects of the sub-projects. After the first year of operation, the Unit continued to perform annually follow-ups with support from a multidisciplinary team.

### c. M&E Utilization

The utilization of the M&E framework became more intensive after the project's restructuring, which established more measurable performance indicators. According to the ICR (page 28), the indicators for the Social Inclusion component (Component 3) were particularly useful in helping to (i) identify bottlenecks and challenges for the social inclusion plans and (ii) monitor the rate of formalization of recyclers compared to the baseline.

M&E Quality Rating  
Substantial

## 11. Other Issues

### a. Safeguards

The project was classified as Environmental Category B for the purposes of OP 4.01 on Environmental Assessment. The project's environmental impacts were expected to be minimal and manageable, since all of the landfill sites had to comply with the legally binding technical and siting criteria to avoid significant adverse effects. During project preparation, a Sectoral Environmental Framework was developed, which included an Environmental Management Framework (EMF) and Sectoral Environmental Management Plan (SEMP). In terms of enforcement, the National Urban Solid Waste Management Unit had limited power on local governments after the transfer of the facilities to the municipalities for their operation. However, the Unit regularly performed environmental monitoring of the sites. According to the ICR (page 29), the EMF and SEMP were effective in helping to ensure compliance with environmental standards, and the project's environmental performance was not affected by significant issues.

OP 4.12 on Involuntary Resettlement was not initially triggered at the design stage, but was added during the 2008 restructuring as a result of the discovery of waste pickers living in shacks in the Puerto Madryn open dump. Thus, a Resettlement Framework was developed





exclusively for the people that would be physically displaced under the project; however, the project eventually did not finance the closure of the dump in Puerto Madryn. Thus, the Resettlement Framework was never activated, since no people were identified as living on the dumpsites financed by the project. According to the ICR (page 30), “the project carried out all civil works outside of the land where waste pickers worked and lived. In none of the cases was there a physical resettlement of waste pickers. Therefore, neither relocation nor loss of shelter, assets or access to assets was identified during project preparation and implementation.”

**b. Fiduciary Compliance**

The ICR (page 30) indicated that all project audit reports were reviewed and found acceptable to the Bank. Although the audit opinions have been mostly qualified, the auditors’ qualifications were related to classification errors, and no material FM issues were reported. Furthermore, the final year 2014 audit report was unqualified. The ICR concludes that while FM performance ranged from Moderately Satisfactory to Satisfactory throughout the entire implementation period, the Bank requirements were generally complied with.

**c. Unintended impacts (Positive or Negative)**

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**d. Other**

Procurement. The supervision records show that the procurement ratings were less than satisfactory for several times during project implementation. This was mainly the result of the procurement team’s weak capacity during the first few years, as it faced difficulties with complex bidding and consultant selection processes that involved new contractual models such as the Design, Build and Operate (DBO) model. For example, in May 2009, the Bank had to cancel the first bid for one of the large works envisioned under Component 2 (Construction of New Landfills and Closure of Open Dumps), namely, the Mar del Plata landfill and complementary facilities, because the submission of explanatory notes to the bidders had not been previously cleared, which led to confusion among the bidders regarding the technical requirements. After this failure, SAYDS created a dedicated procurement unit for projects implemented under SAYDS with international financing. The Bank provided technical assistance to the procurement team and supervised its strengthening closely. Substantial improvement and progress was achieved by the end of 2010. For example, by November 2010, nine contracts were awarded, including the Mar del Plata landfill, and four new ones were underway. At project closing, the procurement rating was upgraded to Satisfactory.

## 12. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Satisfactory	---
Risk to Development Outcome	Modest	Substantial	There are significant risks related to (i) the timely recurring payments of municipalities to the private operators and (ii) ineffective use of the Mar del Plata landfill gas flaring system due to the lack of reliable data on the gas flow.
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	---
Borrower Performance	Moderately Satisfactory	Moderately Satisfactory	---
Quality of ICR		Substantial	---



Note

When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.

The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

### 13. Lessons

The main lessons derived from the project's implementation experience, as paraphrased from the ICR (pages 42-44), are presented below:

- 1. Readiness, patience, and technical assistance are important when entering a new infrastructure sector for the first time.** Long subproject preparation periods and low disbursement may be expected in the initial phases, especially when the project involves innovative and ambitious features. The reliance on criteria for eligibility of subprojects cannot fully substitute for having subprojects already ready for review at appraisal and fully vetted by loan effectiveness.
- 2. Investment in human capital is of key importance.** Capacity development and operationalization of the Project Implementation Unit needs to be carried out as part of project preparation, ideally to be developed strategically as part of a government-led initiative and including a wide range of motivated and trained professionals
- 3. Social inclusion programs require early action and close supervision.** A strong and lengthy interdisciplinary effort is needed to support a successful implementation of social inclusion plans for recyclers. The social component has a long gestation period but is critical and should not be overlooked. Hence, it is advisable to commence early with these activities, before bidding or in parallel with the works implementation.
- 4. Aggregating design, construction and operation into one contract (the Design-Build-Operate model) improved implementation time and quality.** This can be achieved only after an initial start-up. The Design-Build-Operate contract shortened execution time and ensured a standard quality of operation for the facilities built and gave the municipalities the flexibility to modify the terms of the operation after a period of successful operation.
- 5. Cleaning-up micro dumpsites requires a holistic approach,** which involves (i) addressing both the causes that created the dumpsites in the first place (poor collection service, debris and construction waste removal services, lack of containers, etc.), and (ii) promoting a behavioral change among the communities. These factors could be an effective means to ensure the sustainability of the cleanup efforts.

### 14. Assessment Recommended?

No

### 15. Comments on Quality of ICR

The ICR focused thoroughly on assessing the project's results and providing the pertinent base of evidence to support its findings and performance ratings. The ICR made a clear effort to closely link the detailed self-assessment to the project's results framework and indicators. The tables (notably Annex 2 on Outputs by Component) provide a clear, concise and quantitative account of the project's results. The ICR is candid and logical in its analysis. It complies with the guidelines for ICR preparation, although it is too long at 42 pages. Much of this is due to repetitive material in the text. There is also a significant number of errors that could have been eliminated by careful proofreading.

- a. Quality of ICR Rating  
Substantial