

PROJECT PERFORMANCE ASSESSMENT REPORT

MOROCCO

Municipal Solid Waste Sector Development Policy Loans 1-4

Report No. 165279

DECEMBER 14, 2021



IEG
INDEPENDENT
EVALUATION GROUP

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Report No.: 165279

PROJECT PERFORMANCE ASSESSMENT REPORT

Morocco

**Municipal Solid Waste Sector Development Policy Loans
(1 and 2) (IBRD-76650 AND IBRD-79890)**

**Municipal Solid Waste Sector Development Policy Loans
(3 and 4) (IBRD-82300 AND IBRD-84670)**

December 14, 2021

Financial, Private Sector, and Sustainable Development

Independent Evaluation Group

Abbreviations

DH	Moroccan dirham
DPL	development policy loan
GDP	gross domestic product
IEG	Independent Evaluation Group
MSW	municipal solid waste
MSWM	municipal solid waste management
PDO	project development objective
PNDM	National Municipal Solid Waste Management Program
PPAR	Project Performance Assessment Report
SWM	solid waste management
TOC	theory of change

All dollar amounts are US dollars unless otherwise indicated.

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Data

This is a Project Performance Assessment Report by the Independent Evaluation Group of the World Bank Group on the Kingdom of Morocco Municipal Solid Waste Sector Development Policy Loans 1 and 2 (P104937 and P119781) and the Municipal Solid Waste Sector Development Policy Loans 3 and 4 (P127955 and P148642). Appendix C discusses this instrument and the methodology for this evaluation. Following standard Independent Evaluation Group procedure, copies of the draft Project Performance Assessment Report were shared with relevant government officials for their review and comment, which are attached in appendix E.

Municipal Solid Waste Sector Development Policy Loans 1 and 2 (P104937 and P119781)

Basic Data

Program 1			
Country	Morocco	Financing source	IBRD-76650
Global Practice	Urban, Resilience, and Land	World Bank financing commitment	\$132.70 million
Project name	Solid Waste Sector DPL	Actual amount disbursed	\$147.71 million
Project ID	P104937	Programmatic series	Yes
Financing instrument	Development policy lending		
Program 2			
Country	Morocco	Financing source	IBRD-79890
Global Practice	Urban, Resilience, and Land	World Bank financing commitment	\$138.60 million
Project name	Solid Waste Sector DPL 2	Actual amount disbursed	\$141.48 million
Project ID	P119781	Programmatic series	Yes
Financing instrument	Development policy lending		

Dates

Event	Original Date	Actual Date
Solid Waste Sector DPL (P104937)		
Approval	03/19/2009	03/19/2009
Effectiveness	08/18/2009	08/18/2009
Closing	12/31/2009	12/31/2009
Solid Waste Sector DPL 2 (P119781)		
Approval	12/20/2010	12/20/2010
Effectiveness	05/27/2011	05/18/2011
Closing	12/31/2011	12/31/2011

Key Staff Responsible

Management	Appraisal	Completion
Solid Waste Sector DPL (P104937)		
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Solid Waste Sector DPL 2 (P119781)		
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Country director	Neil Simon M. Gray	Neil Simon M. Gray

Municipal Solid Waste Sector Development Policy Loans 3 and 4 (P127955 and P148642)

Basic Data

Program 3			
Country	Morocco	Financing source	IBRD-82300
Global Practice	Urban, Resilience, and Land	World Bank financing commitment	\$130.00 million
Project name	Solid Waste Sector DPL 3	Actual amount disbursed	\$129.84 million
Project ID	P127955	Programmatic series	Yes
Financing instrument	Development policy lending		
Program 4			
Country	Morocco	Financing source	IBRD-84670
Global Practice	Urban, Resilience, and Land	World Bank financing commitment	\$130.00 million
Project name	Solid Waste Sector DPL 4	Actual amount disbursed	\$116.04 million
Project ID	P148642	Programmatic series	Yes
Financing instrument	Development policy lending		

Dates

Event	Original Date	Actual Date
Solid Waste Sector DPL 3 (P127955)		
Approval	02/14/2013	02/14/2013
Effectiveness	06/13/2013	04/30/2013
Closing	12/31/2013	12/31/2013
Solid Waste Sector DPL 4 (P148642)		

Event	Original Date	Actual Date
Approval	02/12/2015	02/12/2015
Effectiveness	06/25/2015	04/22/2015
Closing	12/31/2015	12/31/2015

Key Staff Responsible

Management	Appraisal	Completion
Solid Waste Sector DPL 3 and 4 (P127955 and P148642)		
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Summary

Background and Description

In the early 2000s, problems associated with municipal solid waste (MSW) were increasingly recognized as barriers to balancing urbanization with socioeconomic development in Morocco. The country's MSW services were defined only as "cleanliness" and thus focused on waste collection while limiting attention and resource allocation to sanitary waste disposal. This led to significant negative environmental and social impacts. Without an active and strategic role from the central government, most municipalities restricted municipal solid waste management (MSWM) to waste removal from visible public areas. Municipalities ignored the need for waste disposal in sanitary landfills, thus waste was generally disposed in open dumps.

Environmental degradation cost at least 3.7 percent of gross domestic product in 2003, as estimated by the Mediterranean Environment Technical Assistance Program. Inadequate solid waste management (SWM) contributes about 1.7 billion Moroccan dirhams per year to this cost (0.5 percent of gross domestic product)—one of the highest levels in the Middle East and North Africa Region (compared with 0.2 percent in the Arab Republic of Egypt and 0.1 percent in Algeria, Lebanon, the Syrian Arab Republic, and Tunisia; World Bank 2009). This has affected citizens' health negatively and jeopardized the country's high tourism potential.

The MSW sector has faced major issues and challenges: a weak legal and institutional framework that constrains effective sector governance; insufficient cost-effectiveness of services and doubtful long-term financial sustainability of the sector; the urgent need for integrated and modernized MSWM systems to mitigate the existing systems' negative economic, environmental, and social impacts; and missed opportunities under international climate change mechanisms, that is, the Clean Development Mechanism, to support the global effort in climate change mitigation.

Because of those issues, the government of Morocco recognized MSWM as a top priority, given its impacts on quality of life, public health, environmental and natural resources, and vital economic activities such as tourism. The government took two major steps toward reforms. First, it passed the Solid Waste Management Law 28-00 in November 2006. Second, it developed and approved the National Municipal Solid Waste Management Program (PNDM), a 15-year, three-phase program launched in 2008 in support of the Solid Waste Management Law 28-00. The reform program targeted three areas: enhance sector governance through additional legal, regulatory, and institutional measures designed to establish a clear framework and eliminate overlaps and gaps in its operational structure; improve sector sustainability by introducing financial

mechanisms and incentives for municipalities that support the long-term viability of investments and services; and mainstream social and environmental considerations into the planning, implementation, and operations of MSW services and investments.

The government of Morocco requested the Municipal Solid Waste Sector Development Policy Loan (DPL) to support the implementation of policy reforms and programs through the provision of budgetary support and policy advice. The DPL was developed under the umbrella and in support of the government's reform program to ensure stakeholder ownership of the actions and outcomes. It is the World Bank's first DPL operation in the solid waste sector and the first World Bank operation in this area in Morocco.

The DPL program's development objective was to support the government in implementing its program of reforms aimed at improving the performance of the MSW sector in Morocco. The operation was structured into two DPL programmatic series underpinned by a medium-term program, with triggers for the second operation to signal implementation readiness and achievement of improvements. The first DPL series (DPLs 1 and 2, 2009 to 2011) intended to support the key foundations of the government's reform program by establishing an enabling environment for an integrated and affordable MSW system. The second DPL series (DPLs 3 and 4, 2013 to 2015) built on the momentum gained through the first operation by deepening reforms at the regional and municipal levels.

The development objective of the first DPL series (DPLs 1 and 2) was to improve the financial, environmental, and social performance of Morocco's MSW sector. The first DPL series had loan commitments of \$132.70 million and \$138.60 million, respectively, and it disbursed \$147.71 million and \$141.48 million, respectively. The first loan was approved on March 19, 2009, and closed on schedule on December 31, 2009. The second loan was approved on December 20, 2010, and closed on schedule on December 31, 2011.

The development objective of the second DPL series (DPL 3 and 4) was to improve the economic, environmental, and social performance of Morocco's MSW sector. The slight revision of the project development objectives between the two-program series comprised changing the "financial performance" part of the initial objective to "economic performance" in the second series. Economic performance is harder to assess because it is a more theoretical concept. The second DPL series had loan commitments of \$130 million for each DPL and disbursed \$129.84 million and \$116.04 million, respectively. The third loan was approved on February 14, 2013, and closed on schedule on December 31, 2013. The fourth loan was approved on February 15, 2015, and closed on schedule on December 31, 2015.

The DPL series' design was comprehensive. Under the governance pillar, the design sought to improve policies and institutions at the national and local government levels. It also included activities to strengthen environmental monitoring, promote more effective MSW service delivery, enhance cost recovery, facilitate private sector participation, improve accountability and transparency, and address social aspects for waste pickers. These actions, taken collectively, were expected to result in improved, sustainable, and equitable MSWM that would have positive environmental, social, and economic impacts over the long term.

Results

The two DPL series achieved most of their targets during their implementation periods. The budget support they provided enabled the government to transfer sizable funds to local administrations for investments in MSW collection, disposal, recycling, and recovery and capacity building and awareness raising. Allocations from the central budget have been carried out through eligibility criteria that ensured objectivity and transparency. This transfer of budget resources was instrumental in improving the performance of Morocco's MSW sector as evidenced by the improved MSWM collection and disposal rates. Without the DPL series' support, the investments would not have been built up, and service delivery would not improve to the significant levels that were achieved.

However, as the second DPL series closed, the umbrella PNDM program had encountered difficulties in reaching its targets, notably in completing the remaining sanitary landfills, closing informal dump sites, improving recycling rates, and addressing difficult social issues related to informal waste pickers. Weaknesses persisted in the institutional capacity and resource availability at the municipality level. The capacity-building program, designed with help from the DPL series, was insufficient on its own, and it required continuation and expansion. There were continuing weaknesses in contract management and lack of skills for selecting, preparing, and executing investments. For example, the uneven use of the standard contracts developed under the DPL series persisted. Another key issue was that municipalities lacked the financial autonomy to determine the local tax levels and improve their financial performance so they could access additional resources for capital investments, including carbon markets. Intermunicipal cooperation was necessary for efficient management by pooling resources across municipalities in large agglomerations and joining forces to increase leverage and access guaranteed funds. However, the financing framework for intermunicipal entities was not robust enough, thus limiting the provision of guarantees or funds (for example, Multilateral Investment Guarantee Agency due diligence of a new contract for the management of a landfill in Tangier led to the refusal to award a guarantee because of the lack of a robust financial mechanism).

Moreover, although the DPL series design included the collection and use of a special eco-tax for recycling projects that would finance sorting centers at the landfills, the incentive proved to be insufficient to improve recycling rates. The eco-tax funds were used only partially because the municipalities were unable to meet the funding criteria. There was also a lack of focus on promoting behavioral changes to reduce, reuse, and recycle wastes and to separate wastes at the source, without which a sustainable MSWM system is not possible. Recycling remains a challenge that requires addressing these issues and the valorization of the recycling value chains.

The DPL series supported a pilot for informal waste pickers by establishing a formal waste pickers cooperative that entered into a partnership agreement with a private operator, offering a better work environment and enhanced revenues for 154 people. A few other initiatives to organize the informal sector were initiated either by a contractual obligation in delegated management contracts or by the construction of sorting centers financed by eco-tax revenues. The Independent Evaluation Group mission's interview of one cooperative in the Meknes municipality found that the cooperative's success was due to the construction of a sorting center in the sanitary landfill and the willingness of the municipality and the private company to support the informal waste pickers in organizing as a cooperative and operating the sorting center. However, these are only several pilot initiatives, and more efforts are still needed to scale up these initiatives to formally organize Morocco's informal waste pickers for collection, sorting, and recycling.

Design and Preparation

The operation's design as a DPL instrument was effective. Regarding its macroeconomic impact, the DPL series' disbursements helped meet the government's objective of diversifying financing sources and mobilizing financing on more favorable terms. This supported the government's strategy of fiscal consolidation. In addition, the DPL instrument was key to obtaining the national government's commitment to design and implement a comprehensive SWM reform program. The DPL's prior actions could cover the sector's highly complex and multiple aspects. The full alignment of the reforms supported by this DPL series with the government's MSWM program largely contributed to the achieved results.

The DPL design, however, could have focused more on behavioral change for promoting waste hierarchy principles and the scaling up of pilot initiatives to cover social aspects. These could have been supported by forming and assisting waste picker cooperatives and establishing better cost recovery arrangements to improve financial sustainability, particularly in the second DPL series.

The MSWM DPL series evolved into a broader Municipal Support Program-for-Results operation. The improvements started under the DPLs on financial sustainability and institutional capacity building were sustained under the follow-up operation to strengthen the national and local governments' role, given the renewed emphasis on decentralization and municipal service delivery. However, specific efforts will be needed to move toward circular economy concepts.

Implementation and Supervision

Strong government commitment and ownership throughout program preparation and implementation was the one of the primary success factors along with active World Bank coordination and supervision. The World Bank had contributed strongly to the analytical basis leading to the enactment of the Solid Waste Management Law 28-00 and its operationalization through the PNDM, thus enabling the World Bank to support the government with a series of programmatic DPLs without using sector investment lending as a prior step to gain sector knowledge. The Ministry of Finance and the Ministry of Interior provided strong, stable leadership and oversight from the outset while ensuring the active participation and coordination among all ministries and agencies involved. This enabled the World Bank to act as catalyst for enhanced interministerial collaboration, thereby providing program visibility and helping transform the government's willingness to reform into concrete actions and results. Key government officials and World Bank staff maintained their involvement from preparation to completion of the two DPL series, which helped ensure the continuity of leadership and strategic orientation throughout the program.

Lessons

This assessment offers the following lessons:

- A policy loan can be a viable instrument to start reforms in the MSWM sector, cover multiple aspects, and obtain the government's sustained attention and commitment for a nationwide program. However, because of the sector's complexity, with many actors involved at the national and local levels, these reforms require long-term engagement using various instruments. Policy lending instruments could be the first phase, followed by projects that address multiple aspects of the sector. In Morocco, an ongoing local government support Program-for-Results project and the Casablanca Municipal Program-for-Results Project are focusing on transversal systems development and supporting the municipalities' financial and technical capacity issues that could not be addressed fully under the DPL series.

- Continued attention to strengthening municipalities, both financially and institutionally, is key to enabling them to fulfill their service provision mandate on SWM sustainably. The DPL series achieved improvements in increasing revenues and decreasing arrears, but municipality revenues remain low compared with their potential. Moreover, municipalities do not have the financial autonomy to determine the rate and base on which to levy local taxes. The stagnant level of municipal investments in the MSWM sector after the DPL series closed was mainly caused by limited financial resources, and weak institutional capacities to deliver services and oversee delegated management and concession contracts. Thus, strengthening these financial and institutional capacities is key to completing the remaining investments and improving sustainable service delivery soon. Some specific solutions to improve the sustainability of MSWM efforts are strengthening state support for promoting public-private partnerships for construction and operations and maintenance of facilities, applying the principle of extended producer responsibility and polluter pays principles, and promoting environmental taxation.
- Behavioral change and leveraging technology are critically needed to establish separation at source and promote waste reduction, reuse, and recycling, promoting the evolution into a circular economy and ensuring environmental sustainability. Recycling at the disposal stage through sorting centers that are set up in the landfills is insufficient to improve recycling rates. Urgent steps include involving households and other waste producers by organizing awareness-raising campaigns in collaboration with nongovernmental organizations to implement waste separation at source, and implementing the extended producer responsibility principle for actual valorization of various recycling value chains and green growth. An adequate communication and awareness campaign is also key.
- Integrated upstream interventions, including policy reforms and incentives and investments for circular economy (along with a focus on collection and disposal), are needed to achieve sustainable solid waste management systems. Working on collection and disposal without sufficient traction on waste reduction, separation at source, recycling, and recovery will not meet MSWM needs. This is evident from the fact that the direct landfilling of about 90 percent of municipal waste without recovery, particularly of organic matter, considerably increases the problems related to leachate production. This also leads to landfills reaching their designed life span earlier than planned, requiring expansion or new landfill construction. The ongoing efforts led by Ministry of Industry in collaboration with Ministry of Interior and Ministry of Environment to develop a strategic

vision to promote circular economy are important steps and will be very beneficial for the MSWM efforts and the sustainability of outcomes achieved under the DPL series.

- Scaling up the formalization of waste pickers requires broader enabling policy changes and capacity building and incentives at the local government level. The experience in Morocco with sorting centers at the Oum Azza (Rabat) and Meknes landfills was successful. Replicating this model in other cities will require enabling legislation to support the formalization of those workers through means such as creating a simple registration system through dedicated cooperatives and associations or directly at the recycling plants. Such cooperatives and associations would need to be equipped to train registered waste pickers and provide them with at least basic equipment to ensure the safety and efficiency of their work.

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1. Background, Context, and Design

Background and Context

1.1 Morocco is a lower-middle-income country of about 34 million people that has benefited from political stability in the past 16 years, thus allowing it to implement major political, economic, and institutional reforms. Morocco engaged in a set of wide-ranging reforms with the adoption of a new constitution in 2011 that set the basis for a more open and democratic society, a more modern state of law and institutions, greater separation of powers, and increased decentralization. These reforms have resulted in deep social changes and significant improvements in economic performance and poverty reduction. With annual per capita gross domestic product (GDP) growth averaging 3.3 percent from 2000 to 2015, Morocco reduced its poverty level significantly and started to improve the sharing of the benefits of growth. The percentage of the population living below the national poverty line (\$2.15 per day) fell significantly from 15.3 percent in 2001 to 4.8 percent in 2014, and extreme poverty was eradicated (World Bank, 2019b). Over the same period, the well-being of the bottom 40 percent grew both in absolute and relative terms (the well-being of poor people improved relative to that of the nonpoor), pointing to an increase in shared prosperity.

1.2 Demand for land, energy, and other resources and environmental pressures have increased along with strong economic development, population growth, and improved living standards. However, development of infrastructure, including waste management, has not kept pace with population growth and urbanization, thereby generating environmental, economic, and health costs, especially for poor and vulnerable people. Morocco faces the dynamic challenge of sustaining strong and inclusive growth while addressing environmental constraints and threats that will hinder economic growth, development, and the well-being of people, if left unchecked.

1.3 Morocco's continuing population growth is taking place in its cities, and the rural population started decreasing in about 2015. Urbanization has led to the increasing concentration of people and economic activities in cities, which are estimated to account for about 75 percent of the country's GDP. Cities remain plagued by important pockets of poverty. About 1 million people in urban areas live below the relative poverty threshold (\$1.30 per day), and an additional 2.3 million are economically vulnerable and likely to fall into poverty if exposed to shocks.

1.4 In the early 2000s, problems associated with municipal solid waste (MSW) were recognized as barriers to harmonious urbanization and the overall socioeconomic development process in Morocco. During that time, waste collection was the focus of Morocco's MSW services, whereas waste disposal received limited attention and

resource allocation. This led to significant, negative environmental and social impacts. Without an active and strategic role at the central government level, municipalities neglected waste disposal in sanitary landfills entirely and generally disposed waste in open dumps.

1.5 Insufficient municipal solid waste management (MSWM) affected the health of citizens and environmental resources, but it also interfered with Moroccan integration into the environmentally conscious European Union and US markets and jeopardized the country's high tourism potential. The Mediterranean Environment Technical Assistance Program estimated the cost of environmental degradation as at least 3.7 percent of GDP (2003). The contribution of insufficient solid waste management (SWM) to the cost of environmental degradation was estimated at about 1.7 billion Moroccan dirhams (DH) per year (or 0.5 percent of GDP)—one of the highest levels in the Middle East and North Africa Region (compared with 0.2 percent in the Arab Republic of Egypt and 0.1 percent in Algeria, Lebanon, the Syrian Arab Republic, and Tunisia; World Bank 2009).

1.6 Major issues and challenges faced in the sector included a weak legal and institutional framework, which constrained effective governance of the sector; insufficient cost-effectiveness of services, with doubtful long-term financial sustainability of the sector; the urgent need for integrated and modernized SWM systems to mitigate the existing systems' negative economic, environmental, and social impacts; and missed opportunities available under international climate change mechanisms, that is, the Clean Development Mechanism, while supporting the global effort in climate change mitigation.

1.7 Specifically, there was scope for private sector involvement to improve service delivery, and for that to happen, there was a great need to improve competition and transparency at the bidding stage by strengthening accountability at the municipal level and enhancing the quality of bidding documents. In addition, MSWM services were not cost-effective, and achieving long-term financial sustainability of the sector was (and still is) a significant challenge. MSWM has been one of the largest categories of cities' expenditures (about 10.5 percent of the total municipal budgets in urban areas, of which 85 percent is allocated to collection and transfer services). Financial resources allocated for waste disposal were insignificant because municipalities did not have political, economic, or regulatory incentives to finance disposal facilities. Additionally, the arrangements for financing MSW services were very inadequate. Regarding social concerns, an estimated 3,500 waste pickers (of which about 10 percent are children) have been living on and around open dump sites at the time of appraisal.¹ Most waste pickers face elevated health risks and occupational hazards and live in conditions of severe poverty. Thus, there was a need to develop social inclusion activities as part of any

proposed reform agenda to mitigate such impacts. Ideally, programs would be developed to improve the waste pickers' income, living, and working conditions.

1.8 The government recognized MSWM as a top priority because of its impacts on quality of life, public health, environmental and natural resources, and vital economic activities such as tourism. The government took two key and significant first steps toward reforms. First, the Solid Waste Management Law 28-00 was passed in November 2006. Second, it developed and approved the National Municipal Solid Waste Management Program (PNDM), a 15-year, three-phase program launched in 2008 in support of the Solid Waste Management Law 28-00. The World Bank provided analytical and technical assistance support during the PNDM's inception phase through the Mediterranean Environmental Technical Assistance Program (2003–06). This regional project was the major catalyst of SWM reform in Morocco. The newly appointed government adopted the PNDM formally in its program that was announced in October 2007; moreover, the PNDM was one of the core elements of the government's overall reform program for MSWM. The reform program targeted three areas of reform:

- Enhance the governance of the sector through additional legal, regulatory, and institutional measures designed to establish a clear framework for the sector and eliminate overlap and gaps in the policy-making, regulatory, and operational structure;
- Improve the sector's sustainability through the introduction of financial mechanisms and incentives for municipalities designed to support the long-term viability of investments and services; and
- Mainstream social and environmental considerations into the planning, implementation, and operations of MSW services and investments.

1.9 The PNDM sets out, among other objectives, service and disposal standards for urban areas, quantitative goals for collection coverage (90 percent by 2021), the introduction of sanitary landfills (100 percent of urban areas equipped by 2021), and the closure and rehabilitation of 300 existing open dumps and the promotion of solid waste reduction, recovery, and valorization.

1.10 The program includes three phases:

- 2008–12: Initialization phase, which allows for the integration of ongoing projects into the priority projects, governance improvements, financial sustainability of MSWM services, and improved management of the environmental and social dimensions

- 2012–17: Scale-up phase, which focuses on four reform areas: further improvements in the governance of the sector, sustainability of institutional and financial management of household waste management services, improvements in the sector’s environmental and social performance, and development of recovery systems
- 2017–22: Generalization phase

1.11 According to the Ministry of Environment, the estimated cost of the PNDM is DH 40 billion (about \$4 billion, as of the end of 2020). The development policy loan (DPL) series funded approximately 13.4 percent of this total cost.² The \$40 billion is distributed as follows:

- Collection and cleaning: 72 percent
- Construction and operation of controlled landfills: 14.6 percent
- Rehabilitation and closure of illegal dumps: 6.3 percent
- Studies, monitoring, and control: 3.5 percent
- Sorting, recycling, and recovery: 1.8 percent
- Communication, awareness, and training: 1.8 percent

Objective, Design, and Financing

1.12 The government of Morocco requested the Municipal Solid Waste Sector DPL to support the implementation of policy reforms and programs in the solid waste sector through provision of budgetary support and policy advice. Thus, the DPL was developed under the umbrella and in support of the government’s reform program to ensure full stakeholder ownership of the process, actions, and outcomes. It is the first DPL operation World Bank–wide in the solid waste sector and the first World Bank operation in this area in Morocco.

1.13 The World Bank provided technical assistance and policy advisory services, which laid the groundwork for the DPL operation, such as: (i) municipal finance, including the development of a set of matrixes to guide the allocation of state financial support for the PNDM implementation; (ii) a technical note on the main options to improve the sector’s financial sustainability; (iii) a Private Infrastructure Advisory Facility–granted study for the development of a strategy for private sector participation in the sector; and (iv) support to the Ministry of Interior and Department of Environment for the elaboration of their draft decrees, generic terms of references, and a capacity-building program in the solid waste sector. This in-depth groundwork on

policy options and technical foundations for launching the PNDM would not have materialized without the World Bank's consistent and timely assistance.

1.14 The DPL program's development objective was to support the government in implementing its program of reforms aimed at improving the financial, environmental, and social performance of Morocco's MSW sector. Support for the reforms was structured initially into two single-tranche DPL operation series underpinned by a medium-term program with triggers for the second operation to signal readiness for implementation and achievement of expected improvements. The first DPL series program (DPLs 1 and 2, 2009 to 2011) intended to support the key foundations of the government's reform program to establish an enabling environment for an integrated and affordable MSW system. The second DPL series (DPL 3 and 4, 2013 to 2015) capitalized on the momentum gained during the first operation while deepening the reforms at the regional and municipal levels.

1.15 The specific benefits expected from the implementation of the reform were (i) improved environmental and social conditions resulting from the progressive elimination of uncontrolled dump sites and construction of sanitary landfills, (ii) enhanced access to waste collection services for urban poor people, (iii) the reduced cost of waste landfilling resulting from more cost-effective planning regulations and standards, (iv) more efficient use of resources allocated to the solid waste sector and better targeted public subsidies to the sector, and (v) growth and job creation resulting from the creation of small and medium enterprises, promotion of recycling, and the integration of informal actors such as waste pickers.

First DPL Series, Morocco Solid Waste Sector DPL 1 (P104937) and DPL 2 (P119781)

1.16 The project development objective (PDO) was to improve the financial, environmental, and social performance of the MSW sector in Morocco.

- **Dates:** The first DPL was approved on March 19, 2009, became effective and disbursed five months later (August 19, 2009) and closed on schedule after about four months later (December 31, 2009). The second DPL was approved one year later on December 20, 2010, became effective and disbursed five months later (May 27, 2011) and closed on schedule after seven months (December 31, 2011).
- **Loans:** The original commitment amounts for the two DPLs were \$132.70 million and \$138.60 million, respectively, totaling \$269.30 million. The disbursed amounts were \$147.71 million and \$141.48 million, respectively, totaling \$289.19 million.

Second DPL Programmatic Series, Morocco Solid Waste Sector DPL 3 (P127955) and DPL 4 (P148642)

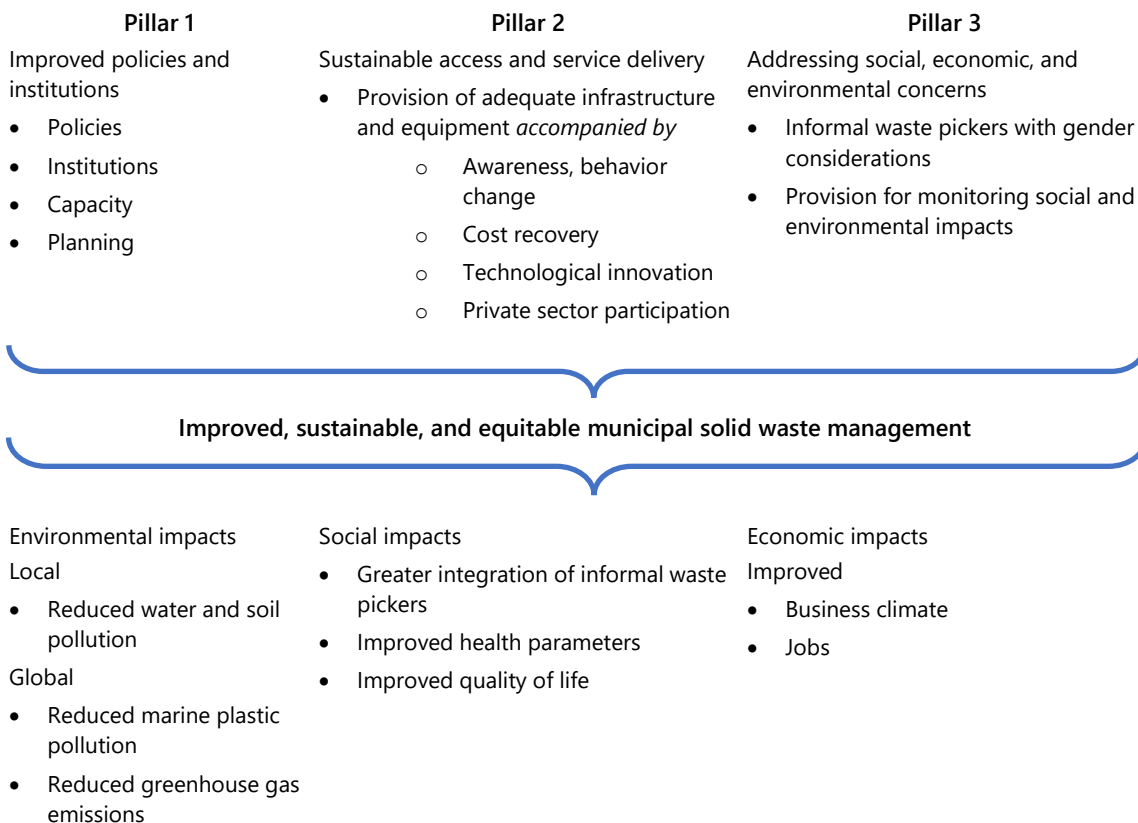
1.17 The PDO of the second programmatic series (DPLs 3 and 4) is to support the government's efforts to improve the economic, environmental, and social performance of the MSW sector. The only difference between the PDOs of the two series is that the first DPL series sought financial improvements, whereas the second DPL series sought economic improvements. However, instead of financial performance that would require concrete financial targets such as cost recovery and other financial ratios, the PDO switched to a more theoretical concept of economic performance that includes direct and indirect costs and benefits, but it is also harder to assess.

- **Dates:** DPL 3 (P127955) was appraised on December 3, 2012, and approved after about three months on February 14, 2013. It became effective and was disbursed four months later (June 13, 2013). It closed after six months on the original closing date of December 31, 2013. DPL 4 (P148642) was appraised almost a year later (November 25, 2014) and approved about two months later (February 12, 2015). It became effective on May 25, 2015, and the funds were disbursed on June 25, 2015. It closed on the original closing date of December 31, 2015.
- **Loans:** DPL 3 had an original total commitment of \$130 million and an actual disbursement of \$129.84 million. DPL 4 had an original total commitment of \$130 million and an actual disbursement of \$116.04 million.

Design

1.18 This programmatic DPL series' theory of change (TOC) is based on the overall TOC of an ongoing Independent Evaluation Group (IEG) major evaluation on MSWM because the Morocco DPL series assessment would feed into the major evaluation's analysis and conclusions significantly (figure 1.1). The DPL series was quite comprehensive and covered almost all the TOC's aspects. These include improved policies and institutions at the national and local government level (that is, the governance pillar under the DPL series); the provision of adequate infrastructure investments, including arrangements for cost recovery, private sector participation, behavioral change, and technological innovations; and addressing social aspects for waste pickers and strengthening environmental monitoring, which would collectively lead to improved, sustainable, and equitable SWM that would have positive environmental, social, and economic impacts.

Figure 1.1. Theory of Change for Improved Municipal Solid Waste Management



Source: Independent Evaluation Group, 2021.

1.19 To achieve its PDO, the first two DPL series supported three areas of reforms and implemented a set of prior actions, as follows:

- **Governance of the MSW sector:** Key prior actions and reforms in this area aimed to (i) establish a National Commission for the National Municipal Solid Waste Management Program, (ii) adopt the eligibility criteria for the allocation of financial support to municipalities, and (iii) update legal arrangements related to classification of waste and delineate the provincial or prefectural primary plan and administrative procedures and technical standards for MSW landfilling.
- **Sustainability of MSW services:** Key prior actions in this area were to (i) adopt a government budget law for 2009 that includes appropriate allocation for the PNDM, (ii) appoint a coordinating entity in charge of developing a national Clean Development Mechanism program to facilitate municipalities' access to the carbon market, and (iii) launch a funded capacity development program in the MSW sector targeting municipalities.

- **Environment and social considerations:** Prior actions under this policy area were to (i) disseminate legislation related to the responsibilities and operations of the national and regional environmental impact assessment committees, and the procedures for environmental impact assessment public consultation processes, and (ii) adopt principles for the inclusion of social considerations in the PNDM framework.

1.20 The prior actions described were adequate and causally linked to the achievement of the DPLs' objective of improving the financial, environmental, and social performance of Morocco's SWM sector.

1.21 The second DPL series sought to deepen the reforms and included the following four policy areas:

- **Policy area A:** governance of the MSW sector. Policy area A focused on the governance in the MSW sector by promoting access to information, fostering greater transparency, and improving accountability of service through providers to citizens. Government actions and activities included the following:
 - Piloting citizen report cards on MSW services
 - Implementing citizens' right to access environmental information
 - Broadened public access to private sector participation contracts
 - Ensuring effective monitoring and benchmarking of MSW service performance
- **Policy area B:** institutional and financial sustainability of MSWM service. This policy area focused on improving integrated SWM through the professionalization of MSW systems in harmony with the government's decentralization agenda, securing funding to cover the costs of MSW services and ensure financial sustainability, and consolidating market competitiveness for MSW service delivery by mitigating the risk related to private sector participation in contract management. Policy area B aimed at improving the operational performance of the sector, the financial capacity of local governments to sustain MSW services, and the environment for private sector participation. Government prior actions and activities included the following:
 - On institutional sustainability:
 - Establishment of the Organic Law to reconfirm that municipalities are fully responsible for integrated SWM (dropped later)

- Introduction of intermunicipal and regional public asset companies to enable professionalization of planning and developing MSW infrastructure and managing MSW service delivery through private sector participation contracts
- Establishment of a national program to support local governments with intergovernmental institution and building for the first pilots of metropolitan districts and intermunicipal arrangements
- On financial sustainability:
 - Establishment of municipal finance reform, including eco-taxes and a dedicated MSW fee
 - Support municipalities to better mobilize municipal fiscal potential
 - Improve and consolidate market competitiveness for MSW service delivery
- **Policy area C:** environmental monitoring and control that focused on the following:
 - Upgrading of the environmental monitoring and control system
 - Training and appointment of environmental inspectors
 - Modernizing management and improving the environmental impact assessment system's performance
- **Policy area D:** development of recycling value chains. Government actions and activities included the following:
 - Use of the eco-tax system to finance the development of a recycling value chain
 - Establishment of a value chain for plastic and other products
 - Use of the eco-tax system to finance a social program for integrating informal waste pickers into the recycling sector

1.22 The DPL programmatic series was quite comprehensive and covers key aspects of the overall TOC shown in figure 1.1. However, it did not include specific prior actions related to the necessary behavioral changes to achieve an integrated approach that develops the value chain for collection and separation at the source to promote downstream waste reduction, reuse, and recycling. In addition, the cost-recovery

mechanisms seemed to be quite limited for establishing sustainable funds for SWM operations and investments at the local level that would maintain the necessary level of investments after the project had closed.

2. What Worked, What Didn't Work, and Why?

Results, What Worked

2.1 The DPL series that supported the government's PNDM program have been successful in achieving the following results.

Economic Performance

2.2 **Budget transfers:** The budget support provided by the DPL series enabled the government to transfer sizable funds to the local administrations for MSWM investments for the collection, disposal, recycling, and recovery and capacity building and awareness raising. Allocations from the central budget were carried out through eligibility criteria that ensured objectivity and transparency, and prior action on sufficient budget allocation for PNDM program safeguarded the budget sources for the sector. This transfer of budget sources was instrumental in improving the performance of Morocco's MSWM sector. Without the DPL series' support, the investments would not have picked up at the level achieved.

2.3 To achieve lower costs for sanitary landfills, the international practice is to have regional landfills receiving waste from a large territory with a significant population. Under the second series, the creation of intermunicipal institutions (Groupement de Commune) contributed to establishing regional landfills and hence economies of scale. Today, regional sanitary landfill sites are a mandatory element within regional land-use plans and are to be reflected in the MSW master plans under preparation in 64 local governments. The unit costs for new sanitary landfills show reasonable results in the range of \$20 per ton compared with \$45 per ton on average in the United States, and a range of \$38 to \$52 in the Greater Beirut area in Lebanon. However, the IEG mission was informed that additional investments are needed for leachate treatments that were not considered under the original investments, which would increase these unit costs.

2.4 Regarding financial sustainability, by the time the DPL series closed, municipality revenues increased by about 20 percent, reaching DH 36,785 million in 2015. DPL 3 and DPL 4 contributed to such municipal finance improvements by promoting the general treasury's advisory services to local governments to improve the management of their revenues, sustaining the PNDM's limited-in-time financial support (three to four years for each eligible project, corresponding to a maximum of 30 percent

of the investment costs) to accompany the transition of the sector, and ensuring additional sources of funding (through the eco-tax) to keep modernizing the service over the long term, once the PNDM financial incentive mechanism has come to an end. However, note that those improvements were not sufficient to cover capital expenditures and continue the remaining investments, particularly for disposal services after the DPL series closed (see section “Results, What did not Work: Economic Performance” below).

Environmental Performance

2.5 Improved MSWM practices: The DPL series supported the government’s PNDM program in improving the waste collection system and overcoming the challenges of cleanliness in Moroccan cities in general. The collection rate was about 80 percent by the time the DPL series closed. The current collection rate is 96 percent, compared with a PNDM target of 90 percent in 2022 and against a baseline of 44 percent at the beginning of the program in 2008.

2.6 Regarding landfills, 22 landfills were constructed with a disposal rate of 53 percent as of the end of DPL series, thus achieving the targets. As of the end of 2020, 4 additional controlled landfills were constructed, totaling 26 landfills. The percentage of waste disposed in sanitary landfills increased from 32 percent (in 2012) to 53 percent by the time the DPL series closed, and the current disposal rate is 63 percent. In addition, some of the earlier landfills (for example, Fez and Rabat) have upgraded their operations with new technologies through the expansion of biogas facilities, electricity generation, leachate treatment facilities, and recycling facilities. The Fez landfill successfully converted biogas collection into more than 1 megawatt of electricity, which meets 30 percent of street lighting needs for the entire city.

2.7 Currently, there are about 18 private companies for delegated management of collection and cleaning, spread over about 159 urban municipalities and serving 75 percent of the urban population. The DPL series served to increase competition, but IEG was informed that more needs to be done because four major companies currently serve about 75 percent of the market, leaving little room for competition for smaller players.

Governance (Improved Institutions)

2.8 The DPL series supported establishing the institutional framework for SWM, including a dedicated institutional structure with detailed terms of reference. A national committee and local monitoring and supervision committees were created and have received assistance from the World Bank. They are currently managing all the PNDM’s components in a concerted approach.

2.9 Primary plans: The DPL series was also instrumental in development and partial completion of solid waste primary plans at the national, regional, and municipal levels. Of the planned 67 primary plans, 64 were under preparation at the end of the DPL series, and 45 primary plans were completed as of the end of 2020. The delays in finalization of the rest of the primary plans were mainly due to the problem of land availability and the population's resistance to the selected landfill sites.

2.10 Institutional capacity building: A fully funded capacity development program was launched with the DPL series, targeting officials at all levels of administration (central government agencies, regions, provinces, and local governments). The government carried out this activity with support from several donors (especially the German Agency for International Cooperation, KfW, and Agence Française de Développement) and ran throughout the implementation of phase 1 of the PNDM, greatly benefiting the DPL series. Training covered overall environmental considerations, environmental impact assessment, solid waste collection and transfer, landfilling, MSWM financing, and SWM primary plans at the provincial level. A wide range of service providers delivered training, including the Ministry of Interior, Fonds d'Équipement Communal, and private training institutes. However, municipalities still often relied heavily on support from national authorities (Ministry of Interior and Ministry of Environment) for technical assistance, which is provided in an ad hoc manner. Thus, more support is needed.

2.11 Access to information and environmental monitoring: The first DPL series supported the government's efforts in improving access to information through the preparation of the PNDM Communication Strategy and Action Plan, with a publicly accessible website for the PNDM. To support the government further in its effort to promote public access to information, the second DPL series supported the establishment of 14 observatories covering almost the entire country. The Ministry of Environment established the observatories in partnership with the regional councils and municipalities. Today, they are tasked to collect environmental data, monitor the status of the environment in each region, and publish environmental indicators. The observatories work in a participatory manner because they rely on a large network of local partners (universities and research institutes) to collect and monitor information. More than 200 environmental indicators have been collected, including 20 indicators on MSW. This information enables the preparation of a State of the Environment Report for each region and identifies the main pressures and strategies and action plans for interventions.

2.12 Fostering greater transparency by broadening public access to MSW contracts: In accordance with the Communal Charter and Article 14 of Law 54-05, the Ministry of Interior's Circular No. 8029 of 2012 instructs municipalities to publish contract

information on the web platform, including extracts of MSW contracts with private operators. As a result, extracts of all MSW contracts signed after the circular's issuance are published on the internet. The adoption of this policy sets a good benchmark among municipalities and private operators toward more transparency and accountability in the use of public funds.

2.13 Accountability of service providers to citizens: After an initiative to introduce citizen report cards (the first citizen feedback mechanism used in municipal services) in the municipality of Temara (2012) under the first DPL series, the second series supported the scaling up of this initiative. Four additional cities (Agadir, Mohammedia, Rabat, and Tanger) have introduced citizen report cards as a rigorous approach to enhance the accountability of service providers and municipal authorities. This mechanism offers space for citizens to express their views on the adequacy and quality of the MSW service and inform the municipality on the performance of their contracted private operators. The IEG mission's interviews with two municipalities revealed that large municipalities currently use digital platforms to receive feedback from citizens. For example, in Casablanca, an integrated platform was deployed to allow better management of citizen feedback and grievances. The national grievance redress mechanism platform <http://www.chikaya.com> is also being extended to local governments. However, more efforts are needed to expand these initiatives to all the municipalities, and the ongoing Program-for-Results project is working on that aspect.

Results, What Did Not Work

2.14 Issues on the collection of waste were addressed well by the PNDM program and with the help of World Bank support. However, there were remaining issues both at the upstream and the downstream levels because of inadequate attention to behavioral change for implementing waste hierarchy principles (reduce, reuse, recycle) and limitations to waste separation at the source. There were also insufficient incentives for the valorization of the various recycling and green programs, along with weak financial and technical capacity of the local governments, which the DPL series could address only to a certain extent.

Improved Environmental Performance

2.15 Improved MSWM practices: Landfills and disposal: During the DPL project lifetime, targets were achieved on sanitary landfill and disposal services, but after the DPL series closed, only four additional controlled landfills were constructed as of the end of 2020, totaling 26 landfills of the 80 planned for the end of 2020. The problem of land availability, the reticence of the population, and municipalities' limited financial and technical capacities have delayed the controlled landfill development program, thus

improving waste treatment with the construction of controlled landfills was below the planned levels under the PNDM program. However, IEG was informed that 24 new projects (landfill and recovery center and controlled landfills) have been programmed for 2021 under the PNDM program, but these new investments seem unlikely to materialize, considering the pace and track record of previous investments. In addition, IEG learned that the high moisture content in the collected waste has led to unanticipated leachate flows from the newly constructed or rehabilitated sanitary landfills, and that needs to be addressed through additional investments. The rehabilitation or closure of illegal dumps has also been quite low (60, including 8 under rehabilitation, compared with a target of 300, or all illegal dumps by the end of 2022).

2.16 Recycling: Recycling and recovery of waste (and thus the reduction of the landfill rate) is the major challenge and one of the main areas for attention in future programs. The recycling rate was 5 percent in 2016 when the project closed. The PNDM had a 20 percent recycling objective for 2020. The current recycling rate is between 8 and 10 percent.

2.17 The direct landfilling of about 90 percent of municipal waste in controlled landfills without recovery, particularly of organic matter, has increased the problems related to leachate production (stocked in basins without treatment) considerably and penalized the achievement of the recycling objective. Without a separate waste collecting practice from the source, the sorting centers do not allow an increase in the current percentage of recycling and recovery of waste, considering the high proportion of organic waste in the waste composition that contaminates the recycled waste. As a result, the quality of the plastic is lower, and recycling becomes more costly. However, these sorting centers can improve the situation of informal waste sorting by integrating and reorganizing the informal waste pickers at the controlled landfills.

2.18 The private sector has been actively engaged with government agencies, but the actual valorization of the various recycling and green programs is constrained by the absence of adequate subsidies to launch these value chains. The eco-tax system proved limited in expanding the value chains (see the Economic Performance section).

Governance (Improved Institutions)

2.19 Private sector and municipality capacity: Municipalities' technical capacity, particularly in managing delegated management and concession contracts (negotiation, monitoring and supervision, control, and evaluation) is still limited and needs strengthened in a well-targeted manner.

2.20 The integration of the private sector is not yet optimal and requires much effort in coordination, adaptation, and standardization. Indeed, the legislative framework

governing the delegated management of household solid waste, which is closely linked to the technical and economic model of waste management, needs to be reviewed and strengthened.

2.21 The DPL series included a comprehensive capacity-building program targeting national and local governments. In addition, a prior action was implemented on the approval of three sets of model bidding and contracting documents. The Minister of Interior issued a circular to dispatch them and require their use; such improvements require long-term engagement, follow-up, and enforcement. For example, IEG was informed that there were many amendments to the delegated management contracts that municipalities established for the addition of complementary activities, such as price revisions and extensions of the duration of basic contracts. The contracts were amended because of inadequate planning of the general framework for delegated management and require technical capacity and expertise in the negotiation and finalization of the associated contracts, which may also affect the principles of competition and transparency that should characterize these contracts and any amendments.

2.22 Thus, additional efforts are needed in standardizing these contracts at the central level and in strengthening the municipalities' capacities in contract management and in the strategic, technical, and financial aspects of recycling and waste recovery.

Economic Performance

2.23 **Cost coverage:** Municipalities are responsible for funding 70 percent of costs for capital investments. The rest is transferred by the central government, but many still do not have adequate resources to implement the plans. Also, not charging user fees for the municipal waste services is a constraint. Thus, the national government collects a general tax and allocates it to municipalities, but often it is not sufficient. The Morocco Urbanization Review (2018) estimated that investment requirements for urban infrastructure, equipment, and services in Moroccan cities amount to about DH 320 billion (\$33.02 billion equivalent) over 2017–27, and municipalities would finance an estimated 69 percent of it (DH 22.2 billion, \$2.29 billion equivalent) per year over the 10-year period. This is unlikely to materialize, based on performance to date. In comparison, municipalities' total capital expenditure has stagnated at about DH 4.5 billion (\$464 million equivalent) per year over 2009–15—about 20 percent of the estimated annual investment required to provide cities with the infrastructure, equipment, and services they need to support improved living standards and economic activity in their territories.

2.24 In addition, intermunicipal cooperation is necessary for efficient management of solid waste in urban agglomerations, but the financing framework for intermunicipal

entities is not robust enough. As a result, when intermunicipal cooperation entities sign contracts with the private sector, they present a high payment risk (for example, Multilateral Investment Guarantee Agency due diligence of a new contract for the management of a landfill in Tangier led to the refusal to award a guarantee because of the lack of a robust financial mechanism for the intermunicipal cooperation entity as the contracting entity).

2.25 The DPL series achieved the result of helping to decrease arrears and increase municipalities' revenues. However, more needs to be done to strengthen the municipalities' financial capacity to address the issues mentioned. The ongoing Program-for-Results project is working on building this capacity. Specifically, for the MSWM sector, the "polluter pays" rule can be implemented to charge differentiated tariffs to various waste producers (that is, the tourism industry could be charged higher rates compared with poorer household segments).

2.26 **Eco-tax to fund recycling projects:** Based on the polluter pays rule, the public authorities, on the World Bank's recommendation, have decided to allocate the eco-tax to the development of the recovery and recycling sector. The plastic packaging sector is subject to a tax intended to be paid into the National Environment Fund from 2014 onward.

2.27 The cumulative revenue from this plastic eco-tax until the end of 2020 represents approximately \$120 million. These revenues are paid into the National Environment Fund, and the Ministry of the Environment grants them to the municipalities to finance, in particular, investments for sorting centers. However, as of the end of 2020, approximately 40 percent (\$48 million) of this revenue was used to finance the following: 13 sorting centers in 13 municipalities with controlled landfills under delegated management, pilot actions for selective collection at source, actions to eliminate black plastic bags, and a plastic recycling unit. This low consumption of eco-tax revenue in the form of subsidies and the limited number of sorting centers built can be explained by the fact that the integration of sorting centers into the waste collecting and treatment chain has led to an increase in operating costs that most municipalities are unable to support in full unless the recycling rate is improved.

2.28 The eco-tax has been applied only to plastics and could not be extended to other sectors. Moreover, the new regulation in Morocco relating to the implementation of extended producer responsibility will replace the eco-tax to avoid double taxation. Thus, the design and implementation of the eco-tax did not constitute an economically viable financial model so far, and extended producer responsibility will replace it soon.

2.29 Carbon finance and climate funds: Accessing carbon markets was one of the goals of the first DPL series that had the prior action, “appointment by the Minister of Interior of a coordinating entity in charge of the development of a national Clean Development Mechanism program to facilitate municipalities’ access to the carbon market.” However, mobilizing carbon funds has mostly failed so far. A separate carbon finance project of the World Bank (Morocco Carbon Finance Program) that ran through 2020 aimed to support Moroccan municipalities to develop carbon assets in the MSW sector and access the carbon market. The program was designed with the expectation that about 16 landfills would join it, with a potential generation of 7.5 million carbon emission reductions over the 2012–20 period. Only one landfill joined the program: the Oum Azza landfill in the Rabat region. There are two reasons behind this lack of achievement. First, several candidate projects did not achieve the degree of maturity required to apply for Clean Development Mechanism benefits by the registration deadline. Second, landfill operators lacked interest because of a negative assessment of the proposed programs’ financial viability, particularly considering the collapse of prices in the carbon market during the 2013–17 period. Other factors for their doubts about financial viability included their responsibility for investing in the required equipment (gas collection and flaring devices), and that some communes were in arrears regarding payments for landfill services, which also produced doubts about the ultimate transfer of Clean Development Mechanism benefits.

Social Performance

2.30 The organization and formalization of the informal sector still represents a major challenge for Morocco. The informal sector constitutes an important number of waste pickers (estimated at 34,000) in the collection, sorting, and recycling of waste in its neighborhoods and on the controlled landfill sites.

2.31 The DPL series supported a pilot for inclusion of informal waste pickers through a partnership of local government, private operators, and nongovernmental organizations. As a result, a formal waste pickers cooperative was established, and it entered into a partnership agreement with the private operator offering a better work environment and enhanced revenues for 154 people. A few other initiatives to organize the informal sector were initiated either by a contractual obligation in delegated management contracts or by the construction of sorting centers financed by eco-tax revenues. IEG interviewed one such cooperative working under the Meknes municipality. This cooperative’s success was due to the construction of a sorting center in the sanitary landfill and the municipality and the private sector company’s willingness of support organizing the informal waste pickers as a cooperative to operate in the sorting center. However, these are only several pilot initiatives, and more efforts

are still needed to scale up these initiatives to formally organize the informal waste pickers for collection, sorting, and recycling.

2.32 The DPL series also supported collection of eco-tax from plastic producers or importers to be used for establishing recycling sorting centers. The eco-tax revenues could partly be used for establishing 13 sorting centers (40 percent of the eco-tax revenues were used until the end of 2020). The government subsidized the investment for sorting centers through eco-taxes, but this cannot be supported by most municipalities because of financial constraints, thus the efforts for setting up sorting centers (which would also benefit informal waste pickers) were also below the planned levels.

Design and Preparation

2.33 The project design as a DPL instrument was effective. Regarding macroeconomy, the DPL series' disbursements helped meet the government's objective of diversifying financing sources and provide financing on more favorable terms. This supported the government's strategy of fiscal consolidation. In addition, the DPL instrument was key to obtaining the national government's commitment to design and implement a comprehensive reform program on SWM. The DPL's prior actions could cover the sector's very complex and multiple aspects. Another major contributor to the results achieved was that the reforms this DPL series supported were aligned fully with the government's program on MSWM.

2.34 The design covered various aspects, but it could have also focused more on the aspects of behavioral change for promoting waste hierarchy principles and on scaling up pilot initiatives to cover social aspects. These could have been supported by forming and assisting waste picker cooperatives and establishing better cost-recovery arrangements to improve financial sustainability, particularly in the second DPL series.

2.35 The MSWM DPL series evolved into a broader Municipal Support Program-for-Results program. The improvements started under the DPLs on financial sustainability, and the follow-up operation picked up institutional capacity building to strengthen the national and local governments' role under the new era for decentralization and municipal service delivery in general.

2.36 Strong government commitment and ownership throughout program preparation and implementation was the one of the primary success factors along with active World Bank coordination and supervision. The enactment of the Solid Waste Management Law 28-00 and its operationalization through the PNDM was built further on a sound analytical basis, to which the World Bank had contributed strongly and that made it possible for the World Bank to accompany the government in a series of

programmatic DPLs, without using sector investment lending as a first step to gain sector knowledge. In addition, the Ministry of Finance, the Ministry of Interior, and the Ministry of Environment have provided strong, stable leadership and oversight from the outset of the DPL program and ensured active participation and coordination among all ministries and agencies involved. On this basis, the World Bank could act as a catalyst for enhanced interministerial collaboration, providing more visibility to the program and helping to turn the willingness to advance sector reforms into concrete actions and results in the field. Key government officials and World Bank staff saw the DPL program through from preparation of the first DPL in the series to completion of the second one, which allowed for continuity of leadership and strategic orientation throughout the entire program.

3. Lessons

3.1 A policy loan can be a viable instrument to start reforms in the MSWM sector, cover multiple aspects, and obtain the government's sustained attention and commitment for a nationwide program. However, because of the sector's complexity, with many actors involved at the national and local levels, these reforms require long-term engagement using various instruments. Policy lending instruments could be the first phase, followed by projects that address multiple aspects of the sector. In Morocco, an ongoing local government support Program-for-Results project and the Casablanca Municipal Program-for-Results Project are focusing on transversal systems development and supporting the municipalities' financial and technical capacity issues that could not be addressed fully under the DPL series.

3.2 Continued attention to strengthening municipalities, both financially and institutionally, is key to enabling them to fulfill their service provision mandate on SWM sustainably. The DPL series achieved improvements in increasing revenues and decreasing arrears, but municipality revenues remain low compared with their potential. Moreover, municipalities do not have the financial autonomy to determine the rate and base on which to levy local taxes. The stagnant level of municipal investments in the MSWM sector after the DPL series closed was caused mainly by limited financial resources, and weak institutional capacities to deliver services and oversee delegated management and concession contracts. Thus, strengthening these financial and institutional capacities is key to completing the remaining investments and improving sustainable service delivery soon. Some specific solutions to improve the sustainability of MSWM efforts are strengthening state support for promoting public-private partnerships for construction and operations and maintenance of facilities, applying the principle of extended producer responsibility and polluter pays principles, and promoting environmental taxation.

3.3 Behavioral change and leveraging technology are critically needed to establish separation at source and promote waste reduction, reuse, and recycling, promoting the evolution into a circular economy and ensuring environmental sustainability. Recycling at the disposal stage through sorting centers that are set up in the landfills is insufficient to improve recycling rates. Urgent steps include involving households and other waste producers by organizing awareness-raising campaigns in collaboration with nongovernmental organizations to implement waste separation at source, and implementing the extended producer responsibility principle for actual valorization of various recycling value chains and green growth. An adequate communication and awareness campaign is also key.

3.4 Integrated upstream interventions, including policy reforms and incentives and investments for circular economy (along with a focus on collection and disposal), are needed to achieve sustainable solid waste management systems. Working on collection and disposal without sufficient traction on upstream waste reduction, separation at source, recycling, and recovery will not address MSWM needs. This is evident from the fact that the direct landfilling of about 90 percent of municipal waste without recovery, particularly of organic matter, considerably increases the problems related to leachate production. This also leads to landfills reaching their designed life span earlier than planned, requiring expansion or new landfill construction. The ongoing efforts led by Ministry of Industry in collaboration with Ministry of Interior and Ministry of Environment to develop a strategic vision to promote circular economy are important steps and will be very beneficial for the MSWM efforts and the sustainability of the outcomes achieved under the DPL series.

3.5 Scaling up the formalization of waste pickers requires broader enabling policy changes and capacity building and incentives at the local government level. The experience in Morocco with sorting centers at the Oum Azza (Rabat) and Meknes landfills was successful. Replicating this model in other cities will require enabling legislation to support the formalization of those workers through means such as creating a simple registration system through dedicated cooperatives and associations or directly at the recycling plants. Such cooperatives and associations would need to be equipped to train registered waste pickers and provide them with at least basic equipment to ensure the safety and efficiency of their work.

¹ According to estimates by the Heinrich Böll Stiftung Foundation in 2020, based on a calculation of the quantities recovered in the informal sector, there may be as many as 34,000 waste pickers in Morocco.

² DPL series 1 and 2 provided \$289.19 million, and DPL series 3 and 4 provided \$245.9 million, totaling \$535.07 million.

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Appendix A. Ratings

Municipal Solid Waste Sector Development Policy Loans 1 and 2 (P104937 and P119781)

Table A.1. Municipal Solid Waste Sector Development Policy Loans 1 and 2 (P104937 and P119781)

Indicator	ICR	ICR Review	PPAR
Outcome	Satisfactory	Moderately satisfactory	Moderately satisfactory
Risk to development outcome	Moderate	Moderate	Significant
Bank performance	Satisfactory	Satisfactory	Satisfactory
Borrower performance	Satisfactory	Satisfactory	Satisfactory

Note: The Implementation Completion and Results Report (ICR) is a self-evaluation by the responsible Global Practice. The ICR Review is an intermediate Independent Evaluation Group product that seeks to independently validate the findings of the ICR. PPAR = Project Performance Assessment Report.

Municipal Solid Waste Sector Development Policy Loans 3 and 4 (P127955 and P148642)

Table A.2. Municipal Solid Waste Sector Development Policy Loans 3 and 4 (P127955 and P148642)

Indicator	ICR	ICR Review	PPAR
Outcome	Satisfactory	Satisfactory	Satisfactory
Risk to development outcome	Moderate	Modest	Significant
Bank performance	Satisfactory	Satisfactory	Satisfactory
Borrower performance	Satisfactory	Satisfactory	Satisfactory

Note: The Implementation Completion and Results Report (ICR) is a self-evaluation by the responsible Global Practice. The ICR Review is an intermediate Independent Evaluation Group product that seeks to independently validate the findings of the ICR. PPAR = Project Performance Assessment Report.

1. Relevance of the Objectives and Design

Objectives

The development objective of the development policy loan (DPL) program was “to support the government in implementing its program of reforms aimed at improving the financial, environmental, and social performance of the municipal solid waste (MSW) sector in Morocco.” The first DPL (DPL 1) supported the key foundations of the government’s reform program, which established the enabling environment for an integrated and affordable MSW system. The second DPL (DPL 2) supported capitalizing

on the momentum gained during the first operation while deepening the reform through results-oriented actions at the regional and municipal levels.

Relevance of the Objectives

The relevance of objectives is rated **high**.

In the 2000s, the legal and institutional framework for the solid waste sector was at an early stage of development, constraining effective governance of the sector. In December 2006, Morocco enacted its first law on solid waste management (SWM)—Solid Waste Management Law 28-00—and laws on environmental protection and environmental impact assessments (EIAs). However, executive regulations needed to be prepared and adopted for effective monitoring, enforcement, and compliance related to (i) regional and local planning tools for SWM; (ii) waste classification and norms and standards for waste treatment and landfilling; (iii) EIA procedures, institutional review mechanisms, and related public consultation; (iv) cost-recovery instruments such as solid waste fees and other financial instruments; and (v) modalities for monitoring and supervision of waste services at the national, regional, and municipal levels.

In accordance with the Charte Communale of 2002 and the new solid waste law, the responsibility for collection, transfer, and disposal of municipal waste was given to the municipalities, under the administrative oversight of the Ministry of Interior. This decentralization was not accompanied by strengthening of human and technical capacities in the local entities. Furthermore, SWM policies have long suffered from insufficient coordination among and within relevant line ministries and an absence of strategic planning, inadequate solid waste technical and managerial capacity at the regional and local levels, and lack of intermunicipal cooperation that led to inefficiencies and foregone economies of scale. This situation affected the quality and cost efficiency of MSW management systems and prevented cost-effective private sector involvement in the sector.

Earlier attempts were made to promote private sector provision of MSW services (private firms collect two-thirds of urban waste nationwide), but competition and transparency at the bidding stage while strengthening accountability at the municipal level and enhancing the bidding documents' quality was necessary.

Without a more active role and strategic guidance by the central government, most municipalities equated municipal solid waste management (MSWM) only with the removal of waste from visible public areas. Municipalities have neglected waste disposal in sanitary landfills and used open dumps.

In the mid-2000s, about 70 percent of MSW produced in urban areas was collected, but less than 10 percent of collected waste was disposed in an environmentally and socially acceptable manner. Problems resulting from disposal in about 300 uncontrolled dump sites throughout the country, included, among others: (i) substandard location of sites and failure to meet environmental standards, (ii) uncontrolled access by informal waste pickers and children, (iii) uncontrolled access by domestic livestock to waste that includes infectious and toxic material, (iv) commingled collection and disposal of health care and industrial hazardous waste with regular household waste, (v) lack of safe and cost-effective waste treatment before final disposal of treatment residuals, and (vi) lack of incentives and programs to stimulate waste reduction and recycling. These practices posed serious health concerns and safety hazards linked to air pollution and surface and groundwater contamination and adversely affected the tourist, export agriculture, and service sectors, which demanded a clean and healthy environment.

Regarding social concerns, there were about 3,500 estimated informal waste pickers, of which 10 percent are estimated to be children, and some live on and around open dump sites (more recent estimates are about 34,000). Most waste pickers faced elevated health risks and occupational hazards and live in conditions of severe poverty. Closing existing dump sites and opening new, controlled sites may reduce and even eliminate opportunities for waste pickers and affect their livelihoods. Thus, social inclusion activities needed to be part of any proposed reform agenda to mitigate such impacts. Ideally, programs would be developed to improve the waste pickers' income, living, and working conditions.

Meeting the requirements of the new solid waste law would have significant fiscal impacts for municipalities. It was estimated that annual investment and operating costs would double from the 2006 amount to 2.2 billion Moroccan dirhams (DH) in 2012, an increase of 14 percent per year. A World Bank analysis (2009) on sector financial issues projected annual financial shortfalls for municipalities of DH 300 million over the following three to five years, even assuming increases in municipal revenues and value-added tax transfers resulting from the government's overall tax reform program. Thus, municipalities could not afford the additional costs of modernizing and sustaining MSWM without increased central financing, improved cost-recovery arrangements, or both.

In addition, the solid waste sector held untapped opportunities to support the global climate mitigation agenda and to mobilize additional financial resources for the sector under the carbon market umbrella. Methane gas generated by waste disposed in landfills could be used to produce electricity. Emission reductions from the capture or use of landfill gas could be sold to Part 1 country entities to generate revenue for the improvement of current SWM practices. In addition to landfill gas capture, carbon

finance was available for composting or waste-to-energy projects that reduced methane emissions. Carbon revenues could be earmarked to support municipal efforts toward greater financial viability of MSW services, to support municipalities that provide land for solid waste treatment and disposal, and to upgrade livelihood conditions for waste-picking communities. The potential emissions reductions from solid waste in Morocco were estimated to be 0.7–1.0 million tons of carbon dioxide equivalent per year.

Government Program

With 60 percent of its population living in cities, the government recognized that improving municipal waste delivery was key for its citizens' well-being, the country's natural resources, and the tourism industry's growth. An assessment of the cost of environmental degradation in Morocco showed that the cost of substandard MSW practices in 2000 was estimated at 0.5 percent of gross domestic product.

In 2008, the government launched a three-phase, 15-year National Municipal Solid Waste Program (PNDM). The PNDM supported municipalities to cope with the requirements of the 2006 Solid Waste Law, including the modernization of the MSW system. The objectives of this program were

- Collection and cleaning of household waste to achieve a collection rate of 90 percent in 2020 and 100 percent in 2022
- Access to controlled landfills for household and similar waste for all urban centers (100 percent) by 2020
- Rehabilitate or close all existing disposal sites (100 percent) by 2020
- Modernize the waste sector by increasing professionalism
- Develop the sorting-recycling-recovery chain with pilot sorting projects to reach a recycling rate of 20 percent by 2020
- Expand and implement solid waste primary management plans for household and similar waste for all prefectures and provinces in the country
- Train and raise awareness among all stakeholders

The government initiated the solid waste reform program in 2006 with the enactment of the first Solid Waste Law 28-00 that established the fundamental principles and key rules that will govern the management of solid waste in Morocco. This formed the foundation for Moroccan policy for the sector with two key objectives: to establish integrated and affordable SWM systems and to mitigate the sector's negative impacts on public health and the environment. More specifically, this law (i) establishes the

institutional framework for SWM; (ii) requires the development of solid waste primary plans at the national, regional, and municipal levels; (iii) establishes cost-recovery principles, including the polluter pays principle and user fees (redevances); (iv) introduces sanitary landfills as the standard for final waste disposal and requires regulations establishing landfill norms and standards; (v) introduces regulations for hazardous waste management; and (vi) establishes a system to monitor compliance with the law.

The government also prepared and approved the PNDM, which resulted from intersectoral collaboration and dialogue among the key ministries concerned. A 15-year, three-phase program launched in 2008, the PNDM sets out objectives for the modernization of SWM, specifically, expanding and professionalizing collection services, modernizing disposal practices, and promoting recycling activities.

The 2005 Country Assistance Strategy did not identify SWM as a key sector of the World Bank's intervention, but it became increasingly clear that the sector needed significant reforms or else the development of many sectors (particularly tourism) would be jeopardized. Indeed, engagement between the World Bank and Morocco on SWM had strengthened steadily since 2002 through dialogue and technical assistance, largely through the Mediterranean Environmental Technical Assistance Program. Thus, the government of Morocco requested support from the World Bank to implement the national reform program. The DPL series therefore was designed to provide budget support and policy advice for the national program to ensure full ownership of process, actions, and outcomes. Because strengthening cross-sectoral policy dialogue among the various government entities and sustained commitment from the government were key to reforming the sector, the DPL program was deemed the best-suited instrument to structure such commitment. A program of two single-tranche DPLs was designed to provide budget support, then two more tranches were included to expand the achievements.

The two DPLs' objectives were highly relevant to the World Bank's Country Partnership Strategy for Morocco covering fiscal years 2010–13, supporting its second and third pillars of service delivery to citizens and sustainable development in a changing climate, in addition to supporting the cross-cutting theme of governance.

The objectives of the second program series were highly relevant in the Country Partnership Strategy for fiscal years 14–17, supporting results area 3: strengthening governance and institutions for improved service delivery to all citizens through its innovative use of citizen report cards to improve access to and quality of service delivery.

Relevance of the Design

The relevance of design is rated **substantial**.

The theory of change (TOC) of this Project Performance Assessment Report (PPAR) was based on the overall TOC of an ongoing IEG major evaluation on MSWM because the Morocco DPL series feeds significantly into the major evaluation's analysis and conclusions (see figure 1.1 in the main report). The DPL series was quite comprehensive and covered almost all aspects of the TOC.

The DPL series program's higher-level objective was to improve the Moroccan MSW sector's financial, environmental, and social performance. The specific benefits expected from the implementation of the reform program supported by this operation are (i) improved environmental and social conditions resulting from the progressive elimination of the existing uncontrolled dump sites and construction of sanitary landfills, (ii) enhanced access to waste collection services for the urban impoverished, (iii) reduced cost of waste landfilling resulting from more cost-effective planning regulations and standards, (iv) more efficient use of resources allocated to the solid waste sector and better targeted public subsidies to the sector, and (v) growth and job creation resulting from the creation of small and medium enterprises, promotion of recycling, and integrating informal actors such as waste pickers.

The first two DPL series included three areas of reforms and prior actions.

- **Governance of the MSW sector:** Key policy actions and reforms in this area aimed to (i) establish a National Commission for the National Municipal Solid Waste Management Program; (ii) adopt the eligibility criteria for the allocation of financial support to municipalities; and (iii) update legal arrangements related to classification of waste, elaboration of the provincial or prefectural primary plan, and administrative procedures and technical standards for MSW landfilling.
- **Sustainability of MSW services:** Prior actions in this area were to (i) adopt a government budget law for 2009 that includes appropriate allocation for the PNDM, (ii) appoint a coordinating entity in charge of developing a national Clean Development Mechanism program to facilitate municipalities' access to the carbon market, and (iii) launch a funded capacity development program in the MSW sector targeting municipalities.
- **Environment and social considerations:** Actions under this policy area were to (i) disseminate legislation related to the responsibilities and operations of the national and regional EIA committees and to the procedures for EIA public

consultation processes, and (ii) adopt principles for the inclusion of social considerations in the framework of the PNDM.

The second DPL series deepened the reforms and included the following four policy areas:

- **Policy area A:** governance of MSW sector. This policy area focused on promoting access to information, fostering greater transparency, and improving accountability of service through providers to citizens. Government actions and activities included:
 - Piloting citizen report cards on MSW services
 - Implementing citizens' right to access environmental information
 - Broadened public access to private sector participation contracts
 - Ensuring effective monitoring and benchmarking of MSW service performance
- **Policy area B:** institutional and financial sustainability of MSW management service. This policy area focused on improving integrated SWM through the professionalization of MSW systems in harmony with the decentralization agenda, securing funding to cover the costs of MSW services and ensure financial sustainability, and consolidating market competitiveness for MSW service delivery by mitigating the risk related to private sector participation in contract management. Policy area B aimed at improving the operational performance of the sector, the financial capacity of local governments to sustain the MSW services, and the environment for private sector participation. Government actions and activities included:
 - Institutional sustainability: establishment of the Organic Law to reconfirm that municipalities are fully responsible for integrated SWM, introduction of intermunicipal and regional public asset companies to enable professionalization of planning and developing MSW infrastructure and managing MSW service delivery through private sector participation contracts, and establishment of a national program to support local governments with intergovernmental institution building for the first pilots of metropolitan districts and intermunicipal arrangements.
 - Financial sustainability: establish municipal finance reform, including eco-taxes and a dedicated MSW fee; support municipalities to better

mobilize municipal fiscal potential; and improve and consolidate market competitiveness for MSW service delivery.

- **Policy area C:** environmental monitoring and control that focused on upgrading the environmental monitoring and control system, training and appointment of environmental inspectors, and modernizing the management and improving the performance of the EIA system
- **Policy area D:** development of recycling value chains. Government actions and activities included using the eco-tax system to finance the development of recycling value chains, establishment of value chains for plastic and other products, and use of the eco-tax system to finance a social program for integrating informal waste pickers into the recycling sector.

The TOC of this programmatic DPL series is based on the overall TOC of an ongoing major evaluation on MSWM by IEG because the assessment of the Morocco DPL series would feed significantly into the major evaluation's analysis and conclusions (see figure 1.1). The DPL series was quite comprehensive and covered almost all aspects of the TOC. However, it did not include specific prior actions on behavior change for the producers of waste to adopt waste hierarchy principles (reduce, recycle, reuse), and the sustainable cost-recovery mechanisms were quite limited to establish sustainable funds for SWM operations and investments at the local level.

The four policy areas and prior actions were relevant and contributed to achieving the program's objectives to support the government's efforts to improve the MSW sector's economic, environmental, and social performance. Policy areas B and D (improve financial revenues of municipalities, decrease arrears caused by private operators, and increase eco-tax revenues) contributed to improving the sector's economic performance. Policy areas A and C (improve environmental monitoring and control) contributed directly to improving the sector's environmental performance. Policy areas A and D (engaging citizens through feedback, ensuring that 20 percent of eco-tax revenues were allocated to support waste pickers' recycling activities, and generating income opportunities in recycling) contributed to improving the sector's social performance. Policy area A (improve governance, access to information, and transparency in the use of public money) contributed indirectly to all three objectives in the project development objective.

2. Efficacy

PPAR Methodology

The PPAR used a mix of different methods to assess the sustainability of project outcomes and to draw lessons on the World Bank's financial and technical support on MSWM. The methods consisted of desk-based document reviews and semistructured interviews. The PPAR assessed the availability of updated or new data related to the project development objective on environmental indicators and available financial and economic data. In-person interviews were not permitted because of coronavirus pandemic restrictions, so virtual interviews were conducted with the following:

- Project task team leaders
- Representatives of the Ministry of Economy, Finance, and Administration Reform
- Ministry of Interior
- Ministry of Environment
- Other donors: German Agency for International Cooperation, Japan International Cooperation Agency, and the European Union
- International Finance Corporation and Multilateral Investment Guarantee Agency
- Nongovernmental organization Heinrich Böll Stiftung Foundation
- Local governments of Meknes and Fez
- Two private operators in charge of collection and disposal services in these municipalities
- One waster picker cooperative operating in the Meknes municipality landfill

Achievement of Objectives

DPL Series 1 and 2

Improved financial performance of the MSW sector is rated **modest**.

Table A.3. DPL 1 and 2, Prior Actions on Governance and Financial Performance

Prior Actions	Status
DPL 1	
Issuance of a circular by the Secretary of State in charge of Water and Environment establishing the National Commission of the National Municipal Solid Waste Management Program	Completed
Adoption by the commission of eligibility criteria for the allocation of financial support to municipalities under the PNDM	Completed
Publication in the official bulletin of the decree related to classification of waste and submission to and approval by the Ministry of Interior and the Secretariat of State in charge of Water and Environment of the two draft decrees related to procedures for the elaboration of a provincial or prefectural primary plan for MSW, and administrative procedures and technical standards for MSW landfilling	Completed
Appropriate funding was made available to the PNDM for 2008, and the 2009 budget law includes appropriate budget allocations in support of the PNDM.	Completed
DPL 2	
The National Commission of the PNDM met at least twice a year in calendar years 2009 and 2010 to coordinate, review, and evaluate the implementation of the PNDM.	Completed
Two regional commissions for the review and validation of provincial and prefectural municipal solid waste primary plans were established and are operational.	Completed
The National Commission of the PNDM reviewed and approved the three sets of model bidding and contracting documents, and the Minister of Interior issued a circular to dispatch them and require their use.	Completed
The 2010 action plan for the PNDM provides adequate funding for the execution and mainstreaming of a communication and public awareness program.	Completed
The signature of a circular by the Minister of Interior on the application of Article 23 of Law 28-00 on user fees for municipal waste	Incomplete

Source: Independent Evaluation Group, 2021.

Note: PNDM = National Municipal Solid Waste Management Program; MSW = municipal solid waste.

Outcomes

- The National Commission of the PNDM reviewed and adopted annual costed work plans and progress reports. Six progress reports were prepared, meeting the target.
- The percentage of total government financial support under the PNDM was allocated based on the adopted eligibility criteria. This was lower than the target of 100 percent; the 80 percent achievement was due to the lack of understanding of the implementation procedures.
- Competition increased in tenders for MSWM, as measured by the increase in number of received bids between 2008 and 2011, reported at bid opening records. The target was not reached because the spread in the number of bids per tender was larger and the median the same, thus there was no significant improvement.
- Revenues generated from the municipal services tax increased in municipalities supported by the PNDM. The achievement of this indicator was below the

expectation for the target year 2011. There was a steady increase of revenues by 62 percent between 2008 and 2009 and by 18 percent between 2009 and 2010. A 5 percent decrease was observed between 2010 and 2011 because of the political economic context.

- One indicative trigger for DPL 2 was not completed: the signature of a circular by the Minister of Interior on the application of Article 23 of the Solid Waste Law 28-00 on user fees for municipal waste. By the time the DPL closed, additional analytical work assessed options for introducing distinct user fees that were established under Solid Waste Law 28-00, which would complement general local government revenues.

The achievement of the objective under this first programmatic series is rated **modest** because three outcomes on increased competition and an increase in revenues were not achieved; moreover, one prior action on user fees for solid waste did not take place.

Improved environmental performance of MSW services is rated **substantial**.

Table A.4. DPL 1 and 2, Prior Actions on Environmental Performance

Prior Action	Status
DPL 1	
Publication in the official bulletin of the decrees related to the responsibilities and operations of the national EIA committee and regional EIA committees, and the procedures for EIA-related public consultations	Completed
Appointment by the Minister of Interior of a coordinating entity in charge of the development of a national Clean Development Mechanism program to facilitate municipalities' access to the carbon market	Completed
Launch of a fully funded capacity development program in the municipal solid waste sector targeting municipalities	Completed
DPL 2	
The capacity development program on municipal solid waste management continued in calendar years 2009 and 2010 and was mainstreamed into a fully funded government training program.	Completed
Three regional EIA committees were established and are operational.	Completed
Three partnership agreements (conventions de partenariat) were signed between the central and local governments to improve solid waste practices.	Completed

Source: Independent Evaluation Group, 2021.

Note: EIA = environmental impact assessment.

Outcomes

- Solid waste infrastructure supported through the PNDM to be consistent with national regulations, based on reviews of projects. A sampling of projects was carried out showing that national technical and environmental regulations were adhered to in the bidding documents.

- Change in the perception by the urban population of MSWM as a priority area of intervention, as measured by sample survey. The data were not available by the end of the project.
- Number of thematic conventions signed between local governments and the state targeting the upgrade of MSWM. Twelve thematic conventions were signed, exceeding the target of 10, setting out the priorities for reform and the accompanying technical and financial support to local governments.
- Number of local governments benefiting from capacity-building activities. Three hundred thirty-three municipalities were trained, against the target of 230. The target was surpassed because of the strong involvement of the Ministry of Interior and German Agency for International Cooperation. Training covered EIA and landfill case studies, collection, cleaning, landfill construction, and provincial SWM primary plans.
- Number of EIAs related to solid waste investments reviewed and approved by regional or national EIA committees. The committees often approved the EIAs after the first review, but they rejected a substantial number (10) at the first review and approved only after subsequent improvement and review.
- Percentage of collected waste disposed in sanitary landfills by 2011. The 30 percent target was achieved, from a baseline of 0 percent.
- Number of open dump sites closed or rehabilitated by 2012. Twenty-one sites were achieved compared with a target of 10. Of the 21 dump sites, 11 were closed and 10 upgraded to continue operation.

The achievement of the objective is rated **substantial** because all the indicators under this objective and prior actions were completed. Commitment was made to continue the capacity development program on MSWM in calendar years 2009 and 2010, and it was mainstreamed into a fully funded government training program. The targets on waste collection and closure or rehabilitation of dump sites were met.

Improved social performance is rated **substantial**.

Table A.5. DPL 1 and 2, Prior Actions on Social Performance

Prior Action	Status
DPL 1	
Adoption by the National Commission of the PNDM of principles for the inclusion of social considerations in the framework of the PNDM	Completed
DPL 2	
The 2010 action plan for the PNDM provides for adequate funding for extending social inclusion programs to disposal investments supported by the PNDM.	Completed

Source: Independent Evaluation Group, 2021.

Note: PNDM = National Municipal Solid Waste Management Program.

Outcomes

Number of waste pickers benefiting from social inclusion activities. All waste pickers on the improved waste sorting station on the Oum Azza landfill in Rabat have seen their work conditions improve substantially (154 waste pickers).

The DPL supported implementation of a successful pilot to formalize waste pickers and thus met the target, so achievement of the targeted outcome is **substantial**.

DPL Series 3 and 4

Improved economic performance of the MSW sector is rated **substantial**.

Table A.6. DPL 3 and 4 Prior Actions on Economic Performance

Prior Action	Status
DPL 3	
The Minister of Interior issued Circular No. 8029 (dated May 23, 2012) requiring municipalities to disclose extracts of MSW service contracts in the Official Gazette for Local Governments (Bulletin Officiel des Collectivités Territoriales).	Completed
The Minister of Energy, Mines, Water, and Environment signed three contracts with engineering firms on December 10, 2012, to assist local governments in better preparing and managing MSW projects and contracts throughout the borrower's territory.	Completed
The Minister of Interior issued Circular No. D13015 (dated December 17, 2012) establishing an MSW fee that municipalities could charge large waste producers, in compliance with the provisions of Article 23 of Law No. 28-00 on solid waste management (dated November 22, 2006).	Completed
Appropriate funding was made available to the National Solid Waste Management Program for 2012, and the borrower's draft budget law for 2013 includes appropriate budget allocation in support to the PNDM.	Completed
The Minister of Interior issued Circular No. 5533 (dated October 5, 2012) regarding local governments' budget preparation, and Circular No. 17887 (dated December 11, 2012) addressing the issue of arrears due by local governments under MSW service contracts, including specific instructions and guidance to ensure fair estimate of service costs, on price revision, and on budget arrangements regarding arrears rescheduling agreements.	Completed
DPL 4	
The National Commission for the National Municipal Solid Waste Management Program, on October 29, 2014, adopted the use of the citizen feedback tool on quality and adequacy of municipal waste services (citizen report cards) as an eligibility criterion for program financial support.	Completed

Prior Action	Status
The Ministry of Interior adopted a multiyear assistance program to support local governments and create intermunicipal and regional institutions for local public services, including MSW services, and secured the financing for the implementation of such a program on December 2, 2013.	Completed
The Chief Treasurer issued Decision No. 0188 (dated July 16, 2014) regarding the General Treasury's advisory services to local governments to improve the management of their revenues.	Completed
The Minister of Interior issued Circular No. 17495 (dated October 28, 2014), which defines the modalities for a third-party conciliation mechanism for disputes and requires the inclusion of such a mechanism in all delegated management contracts between municipalities and private operators for MSW services.	Completed

Source: Independent Evaluation Group, 2021.

Note: PNDM = National Municipal Solid Waste Management Program; MSW = municipal solid waste.

Outcomes

- Percentage of contracts signed (after the issuance of Circular No. 8029) with an extract disclosed on the web platform. All contracts are now published on the Portail National des Collectivités Territoriales.¹
- Number of intermunicipal and regional institutions (Groupements d'Agglomération et Groupements de Communes) established. Twenty-five institutions were established, exceeding the target of 15.
- Percentage increase in aggregated municipal revenues compared with 2012. The original target at DPL 3 approval was 10 percent, but was revised to 20 percent at DPL 4 approval. Revenues increased from DH 30,809 million in 2012 to DH 36,785 million in 2015. The target was achieved.
- Decrease in the percentage of total volume of arrears (as declared by private operators and verified by Water and Sanitation Department) compared with the original, annual total amount of MSW contracts. The original target at DPL 3 approval was the reduction of arrears from 70 percent to 50 percent, but the target was revised to 30 percent at DPL 4 approval. The remaining arrears were estimated at DH 380 million, meaning an actual reduction to 20 percent. The target was exceeded.
- Total amount of eco-taxes collected and allocated to the National Environmental Fund. DH 409 million was collected, exceeding the target of DH 230 million.

The achievement of this objective is rated **substantial** because the project achieved all the targets to increase municipal revenues, decrease arrears, and generate eco-tax revenues by the time the project closed.

¹ See <https://www.collectivites-territoriales.gov.ma/> for reference

Improved environmental performance of the MSW sector is rated **substantial**.

Table A.7. DPL 3 and 4, Prior Actions on Environmental Performance

Prior Action	Status
DPL 3	
The Cabinet Council, on December 14, 2012, approved the draft of a law on environment and sustainable development, introducing the right of any person to access environmental information, the institutional arrangements for environmental control, and the principle of extended producer responsibility.	Completed
The National Commission for the National Municipal Solid Waste Management Program, on October 23, 2012, approved the introduction of a citizen feedback tool on quality and adequacy of municipal solid waste services (citizen report cards) as a key component of the PNDM to support local governments in building demand-side governance in municipal solid waste service delivery.	Completed
The head of government issued Circular No. 27/2012 (dated November 30, 2012) establishing a national information and coordination system on environmental inspections, infractions, and sanctions.	Completed
The Minister of Energy, Mines, Water, and Environment issued Circular No. 66/2012 (dated November 15, 2012) establishing within the Ministry a special unit of sworn environmental inspectors.	Completed
The Cabinet Council, on October 15, 2012, approved the borrower's draft budget law for 2013, which, among other things, introduces an eco-tax on plastic packaging and amends the arrangements applicable to the National Fund for Environment to have the fund receive the eco-tax revenues.	Completed
DPL 4	
Fourteen Regional Observatories for Environment and Sustainable Development were established in 2011–14 to monitor environmental indicators, including those related to solid waste management.	Completed
The Cabinet Council, on January 8, 2015, adopted a draft decree establishing an environmental control body (Police de l'Environnement) in accordance with the provisions of Law No. 99-12 on environment and sustainable development, as promulgated on March 6, 2014.	Completed
The Cabinet Council, on December 4, 2014, adopted a draft decree concerning the reorganization of the Ministry of Environment, under the Minister of Energy, Mines, Water, and Environment, including the creation of a unit in charge of developing the recycling value chains. The Minister of Environment, under the Minister of Energy, Mines, Water, and Environment, issued Circular No. 209 (dated November 11, 2014) establishing a strategic committee for recycling value chains with the participation of key actors (local governments, eco-tax payers, the recycling industry, and civil society organizations).	Completed
The Minister of Environment, under the Minister of Energy, Mines, Water, and Environment, issued Circular No. 208 (dated November 11, 2014) setting forth the modalities for the allocation of eco-tax revenues and providing that at least 20 percent of eco-tax revenues will be allocated to support recycling activities targeting waste pickers, with specific focus on the gender dimension until the completion of the PNDM.	Completed

Source: Independent Evaluation Group, 2021.

Note: DPL = development policy loan; PNDM = National Municipal Solid Waste Management Program.

Outcomes

- Percentage of MSW collected professionally and disposed of in sanitary landfills. Disposal rate increased from 32 percent to 53 percent at the end of the project,

lower than the target of 55 percent of revised target. Twenty-two sanitary landfills are operational in Morocco receiving about 2.9 million tons of waste (or 53 percent of collected MSW)—this includes the recently completed sanitary landfills of Marrakech, Meknes, and Ouarzazate. Once the five sanitary landfills that are currently under construction (Beni Mellal, Casablanca, Khenifra, Sefrou, and Tanger) were completed, the rate was expected to reach 80 percent by the time the project closed. At the time of the IEG mission, 26 landfills had been built, and disposal on these landfills comprised 63 percent of collected MSW.

- Percentage of MSW sanitary landfills inspected regularly. The Ministry of Environment inspected all sanitary landfills under operation in 2014/15.
- Number of recycling projects supported through eco-tax revenues. At the end of the project, 18 projects were approved, exceeding the target of 10 projects. Fifteen projects were approved among municipality, Ministry of Interior, and Ministry of Environment, and all conventions were signed. Three projects were approved with local community groups (for example, cooperatives) and are in the process of having conventions signed.

The achievement of this objective is rated **substantial** at the end of the project. Twenty-two landfills were operational in Morocco at the time of the Implementation Completion and Results Report (ICR), receiving about 2.9 million tons of waste (53 percent of collected MSW). The Ministry of Environment inspected all sanitary landfills under operation in 2014/15. At the time of the ICR, 18 projects had been approved. Fifteen of those had been approved between municipality, Ministry of Interior, and Ministry of Environment, and all conventions had been signed. Three projects had been approved with the local community groups (for example, cooperatives), and were in the process of having conventions signed. At the time of IEG mission in 2021, 13 of those projects were funded.

Improved social performance of the MSW sector is rated **modest**.

There were no specific prior actions on this aspect except for citizen report cards being used as eligibility criteria for funds allocation, as discussed under the economic performance objective.

Outcomes

- Number of municipalities implementing citizen report cards on MSW services. Five municipalities (Agadir, Mohammedia, Rabat, Tanger, and Temara) implemented them.

- Number of income-generating opportunities in the recycling sector for waste pickers. According to the ICR, this indicator's objective is to create job opportunities. The 18 recycling projects approved will generate an estimated 1,050 job opportunities for waste pickers. It is estimated that about 5 percent of waste pickers are female.

The achievement of the objective is rated **modest** at the end of the project. Although the project achieved the targets on citizen report cards, creating job opportunities for informal waste pickers was not widespread. The IEG mission was informed that only 13 sorting centers (recycling projects) were approved, and waste picker cooperatives were implemented in few sorting centers. IEG was informed about two waste picker cooperatives operating in the Meknes and Rabat landfills, but no other cooperatives were active. The project could have focused on this issue to provide an appropriate policy framework, capacity building, and incentives at the local level.

PNDM Program Achievements

The PNDM program's achievements after the DPL series closed were quite limited except for collection practices. The Ministry of Environment reported the following results:

- The increase in the professionalized collection rate is 96 percent compared with 66 percent before 2012 and 44 percent in 2008, against the target of professionalized collection (delegated management) of 90 percent in 2022.
- The increase in the rate of landfilling and recovery centers is 62.63 percent (3.95 million tons) of the household waste generated, compared with 32 percent in 2012 and 10 percent before 2008, against the target of 100 percent in 2022.
- The current number of controlled landfills and landfilling and recovery centers is 26 (of the planned 80 landfills): Agadir, Al Hoceima, Beni Mellal, Berkane, Boujdour, Dakhla, El Jadida, Essaouira, Es-Smara, Fez, Figuig, Guelmim, Ifrane, Khenifra, Khouribga, Laayoune, Marrakech, M'Dieq-Fnideq, Meknes, Mohammedia, Nador, Ouarzazate, Oujda, Rabat, Safi, and Tangier.
- Twenty-four new projects of controlled landfills and programmed for 2021.
- Fifty-two uncontrolled landfills were rehabilitated. Twenty-two are in progress and programmed in 2019–21, compared with 220 uncontrolled landfills to be rehabilitated by 2022 (in total, only 33 percent of the planned uncontrolled landfills).

- The number of planned waste management primary plans is 64, of which 45 provincial plans were completed, including Agadir and Inezgane, Al Haouz, Al Hoceima, Al Jadida, Angad, Benslimane, Berrechid, Boulemane, Casablanca, Chichaoua, Chtouka Ait Baha, Driouch, El Hajeb, El Youssoufia, Errachidia, Essaouira, Fakh Bensaleh, Figuig, Guelmim, Guercif, Jerrada, Kelaa of the Sraghna, Kénitra, Khenifra, Larache, Marrakech, Meknes, Mohammedia, Ouarzazate, Oujda-Midelt, Rabat-Salé-Kénitra, Rehamna, Sefrou, Settati, Sidi Bennour, Sidi Kacem, Sidi Slimane, Taourirt, Taroudante, Tata, Tinghir, and Tiznit.
- Eighteen waste management primary plans are in progress, and one primary plan of waste management is being launched (Khouribga).

3. Outcome

Municipal Solid Waste Sector DPLs 1 and 2 (P104937 and P119781)

Moderately satisfactory. The relevance of the objectives for DPL 1 and DPL 2 was high because both operations were consistent with the country and sector priorities, and the World Bank was able to incorporate the SWM in its country strategy after sustained dialogue and assistance. Overall, relevance of design was substantial, with an adequate results chain to address important aspects of MSWM reforms and the right choice of the DPL instrument to capture country-level sector reforms. The efficacy of achieving the development objective of improved social and environmental performance was substantial, but some areas still need improvement on financial performance, especially at the municipal level. There was still scope for improvement in increasing competition for tenders, greater understanding of eligibility for government financial allocations, and assessing cost-effectiveness and user perceptions of service quality.

Municipal Solid Waste Sector DPLs 3 and 4 (P127955 and P148642)

Satisfactory. Like the previous programmatic series, the relevance of objectives was high, and the relevance of design was substantial because of its comprehensiveness and choice of instrument. However, the operations could have targeted cost-recovery mechanisms and the scaling up of successful pilots on formalizing waste pickers more intensively. Achievement of objectives on environment and financial performance were substantial because all the indicator targets were achieved. Achievement on social performance was rated modest because the outcome targets on formal jobs were lower than what the ICR reported earlier. On balance, the overall outcome is rated **satisfactory**.

4. Risk to Development Outcome

The overall risk to the development outcomes from these DPL operations was considered modest by the time of DPL 4's closure at the end of 2015. However, considering the partial achievements and the uncertainty in achieving the remaining targets under the PNDM to date, six years after the DPL series closed, some of the risks could have been assessed higher. For example, the technical risk was assessed as modest because the decentralization to local governments and their contracting of the private sector included both collection and disposal operations. However, technical risk is clearly significant because the local governments still need substantial capacity building on technical aspects of SWM and management of private contracts for better service delivery. In addition, financial sustainability is another significant area of risk in the future, linked to the political risk with stakeholders. Unless a sustainable cost-recovery mechanism is built through user fees to increase municipal revenues, the shortfalls in funds from government and donor support may lead to stagnation in capital investments. This can partly explain the municipalities' low achievements in completing the landfill investments. The ongoing Program-for-Results project is trying to build institutional and financial capacity through a broader urban project, but a dedicated effort is still needed for SWM interventions that are targeted intensively at the municipal level.

Another risk is that of stakeholder opposition to recycling reforms. At the time the projects were closed, it was thought that creating job opportunities for informal waste pickers in the recycling sector (reinforced by providing a new source of income from eco-tax revenues) mitigated this risk. However, the recycling targets are unlikely to be achieved unless a system of sorting at the source is formed, awareness-raising and behavioral change for recycling by households and others is developed, and various value chains are built under the extended producer responsibility approach. The stakeholders may still resist if not supported by an effective awareness-raising program.

5. Bank Performance

Bank performance is rated **satisfactory**.

Quality at Entry

The design of the two DPL programmatic series for Morocco benefited from strong analytical work carried out in coordination with other donors, the long dialogue with the government, and the technical assistance provided through a program of the Mediterranean Environment Technical Assistance Program. The choice of a series of single-tranche DPLs, underpinned by a medium-term program with triggers for the second operation, allowed for flexibility in achieving programmatic objectives. The

DPL's strategic relevance and approach was appropriate to the Moroccan context, as were the implementation arrangements. Monitoring and evaluation (M&E) arrangements were adequate and well aligned with the borrower's M&E system, and the risk assessment was accurate. The decision to enter into a second programmatic series was guided by the lessons presented in the first ICR and allowed for further reforms in the MSW sector. The quality at entry is rated **satisfactory**.

Quality of Supervision

Technically strong task teams, including a range of specialists in the World Bank, supervised the DPL program. Although the expert team was specialized, the program also benefited from continuity in World Bank support because the same task team leader led the process from preparation of DPL 1 through the supervision of DPL 4. The World Bank team alerted the government to delays to achieving some of the results indicators. This careful supervision not only helped the program stay on track but also built a strong relationship between the World Bank and the client. The World Bank could act as a catalyst for enhanced interministerial collaboration, providing more visibility to the program and helping to turn the willingness to advance sector reforms into concrete actions and results in the field. The quality of supervision is rated **satisfactory**.

6. Borrower Performance

Borrower performance is rated **satisfactory**.

Government Performance

Strong government commitment and ownership throughout program preparation and implementation was the one of the primary success factors, along with active World Bank coordination and supervision. The enactment of Law 28-00 and its operationalization through the PNDM was built further on a sound analytical basis, to which the World Bank had contributed strongly and that made it possible for the World Bank to accompany the government in a series of programmatic DPLs, without using sector investment lending as a first step to gain sector knowledge.

Implementing Agency Performance

The Ministry of Finance and Ministry of Interior provided strong, stable leadership and oversight from the outset of the DPL program and ensured active participation and coordination among all ministries and agencies involved. Key government and World Bank staff saw the DPL program through from preparation of the first DPL in the series to completion of the last, which allowed for continuity of leadership and strategic direction through the entire program.

7. Quality of Monitoring and Evaluation

Design

The M&E system was aligned closely to key outcomes expected from the PNDM. M&E arrangements also covered the phases of achieving prior actions for DPL 1 and indicative triggers for DPL 2, which were all accomplished on schedule. The M&E framework remained almost identical between DPL 3 and DPL 4. Minor clarifications were introduced with DPL 4, and the targets of 4 of the 10 indicators were adjusted upward to reflect the program's progress and early achievements. The objectives were specified clearly, and the selected indicators reflect the objectives to a large extent. All indicators were measurable in occurrence, numbers, and timing. The M&E data collection activities were embedded well within the government's own institutions.

Implementation

For the first DPL program series, the Project Management Unit did not have sufficient capacity to assure regular monitoring of indicators for the DPL program because of inherent institutional weaknesses. To mitigate this shortcoming, two experts were hired to assist the Project Management Unit, which facilitated a more regular follow-up on the indicators through production of quarterly monitoring reports for the PNDM and better definition and methodology for data collection, including for the indicators in the DPL policy matrix. During the second DPL program series, regular meetings of the National Commission of PNDM enabled good oversight of the implementation progress.

Use

There were some shortcomings regarding M&E data in decision-making and resource allocation for the PNDM under the first DPL series. M&E findings were communicated to relevant stakeholders and made partly available on the government's website. The World Bank team used M&E data actively to alert the government to implementation delays.

Appendix B. Fiduciary, Environmental, and Social Aspects

Fiduciary

There were no issues on fiduciary compliance. Disbursements were made on achievements on prior actions, as for all development policy loans. The project went to the Board of Executive Directors only when these actions were completed, and the full amount was disbursed on project approval. The funds were budgetary support to the Ministry of Finance, so there were no procurement or fiduciary compliance issues.

Environmental and Social Effects

The supported reforms, including the prior actions of the development policy loan series, were expected to have significant, positive impacts on the environment, forests, and natural resources. No supported prior action has had any significant adverse effect on the environment, forests, and natural resources. It is likely that the program has had a positive effect both environmentally and socially. Municipal solid waste collection and disposal became more effective and efficient, the waste was increasingly deposited in sanitary landfills, informal waste pickers were offered formal job opportunities in the recycling sector, and citizen report cards were introduced.

Appendix C. Methods and Evidence

Methodology

This Project Performance Assessment Report (PPAR) used a mix of different methods to address the evaluation questions, including desk-based document reviews and virtual semistructured interviews. The PPAR assess the availability of data (updated or new) related to the project development objective from local or international sources on environmental indicators, citizen report cards, and financial data. Although the PPAR planned to use geospatial analysis to assess landfills and dump sites because of a lack of provision of data on the location of landfills and dump sites, this analysis could not be conducted. In addition, because of coronavirus (COVID-19) pandemic restrictions, the team could not conduct in-person site visits, so it conducted all interviews virtually.

Pre-mission desk review of key documents and secondary data sets consisted of a desk review of documents by the World Bank, the client country government, other institutions, and relevant donors.

Pre-mission interviews were conducted with Jaafar Fria (task team leader), Maria Sarraf (task team leader), and Carole Megevand (sector lead environment based in Morocco).

Planned virtual mission interviews with key stakeholders in Morocco focused on the following:

- Project management team
- Ministry of Economy, Finance, and Administration Reform
- Ministry of Interior
- Ministry of Energy, Mines, Water, and Sustainable Development
- Other donors: German Agency for International Cooperation, Japan International Cooperation Agency, and the European Union
- International Finance Corporation and Multilateral Investment Guarantee Agency representatives
- Local governments: Meknes and Fez local government solid waste management departments, two private operators in these municipalities, and one cooperative for waste pickers operating in Meknes landfill

Interview Protocol

This includes the general questions, and the interview questionnaire was revised based on the stakeholder.

Municipal Solid Waste Management Policy and Planning

1. Overview: Looking back over the past 10 to 15 years, what are the main achievements of the National Municipal Solid Waste Management Program (PNDM)? What are the most important issues in municipal solid waste management (MSWM) for the country going forward?
2. Solid Waste Law: The Solid Waste Law has been in effect since 2006. Does the experience of the past 15 years indicate any need for updating or expanding the law?
3. Master plans for municipalities: PNDM aimed to have all municipalities develop master plans and have them approved by one of the two regional commissions for PNDM. What is the progress in the preparation, approval, and implementation of these plans?

MSWM Infrastructure

1. Closure of uncontrolled dump sites: What is the progress in closing uncontrolled dump sites? What are the constraints? What is the strategy going forward?
2. Controlled landfills: What is the progress against targets for new controlled landfills? What are the constraints?
3. Applying the waste hierarchy (reduce, reuse, recover, recycle)
4. Municipal solid waste (MSW) collection: The government has targeted 90 percent collection of MSW by 2020 and 100 percent by 2030. What is the progress in this regard? What is the strategy for improving the share of collection?
5. MSW separation at source: What is the government's approach for encouraging separation of MSW at source (organic waste, plastics, and other recyclables and other waste)? To what extent is separation being carried out?
6. Recycling: Morocco aims to increase the rate of recycled material from 5 percent in 2016 to 20 percent by 2022. What has been the progress in this regard? What are the important measures that the government is supporting for increasing the share of recycling of MSW?

7. Plastics: How effective are the ban of plastic bags and the eco-tax on plastic production measures in reducing production and use of plastics?
8. Marine plastic pollution: Does the government have a strategy for addressing marine plastic pollution?

Environmental Sustainability

1. Tracking soil and water pollution from MSW: The World Bank development policy loans supported institutional capacity for environmental impact assessments and data collection for monitoring soil and water pollution from landfills. To what extent is such monitoring being done? Is such data publicly available?

Financial Sustainability

1. Budget allocations for PNDM: The government's budget law for 2009 includes appropriate allocation for the PNDM. Have the allocations increased in line with the needs of municipalities over the years?
2. Carbon finance: The World Bank supported the creation of a coordinating entity to facilitate municipalities' access to the carbon market. What has been the experience in this regard? Have there been efforts to help municipalities access green finance through reduction in landfill emissions and so on?
3. Reform of municipal finance: What has been the experience with reform of municipal finance, including eco-taxes and a dedicated MSW fee?

Private Sector Involvement

1. Private sector participation in MSWM: How do you evaluate the participation of the private sector in MSWM? What are the problems and constraints encountered by the private sector, notably in the nature of the concession contracts, the duration of these contracts, the guarantees required, the payment of operating costs, and the performance delivery of services?
2. What has been the experience with contract management for private sector involvement? Do municipalities have sufficient capacity in this regard?

Institutional Issues

1. Coordination between central government ministries and the National Commission: What has the experience been for coordination between the central government ministries and the National Commission? What are the areas for improvement?
2. Coordination among central, provincial, and local governments: What has the experience been for communication, coordination, and monitoring among the central government entities, provinces, and municipalities? What are the areas for improvement?
3. Intermunicipal arrangements: How many intermunicipal and regional public asset companies have been created? What has been the experience with them?
4. Capacity of municipalities: Are there any gaps in municipalities' capacity on technical, planning and managerial capacity, and financial capacity?

Social Inclusion, Informal Waste Pickers

1. Informal waste pickers: Waste pickers in the informal sector have been encouraged to form cooperatives and to be employed in recycling projects. What has been the experience with these cooperatives? Are more cooperatives and recycling projects being created?

Accountability for Service Delivery

1. Citizen report cards: Is the pilot effort for citizen report cards being continued? What has been the experience so far? If citizen report cards have not been continued, are there other methods being used to get feedback from citizens on MSW service delivery?
2. Benchmarking of MSW service performance: How does the government monitor MSWM performance across municipalities? What are the criteria and performance indicators used?
3. Incentives for improved MSWM service delivery: What are the incentives that the government uses to reward good performance by municipalities for MSWM?

Governance and Transparency

1. Transparency in private sector contracts: What is the government's practice with regard to broadened public access and increased competition for private contracts for MSWM?

2. Access to environmental information: What is the government's practice in providing access to environmental (soil and water pollution) information?

Responding to COVID-19

1. MSWM challenges from COVID-19: What are the challenges faced by municipalities in implementing MSWM after the spread of COVID-19? What guidance and support has been sought by municipalities, and what is the nature of support provided by central government entities?
2. COVID-19 and MSWM workforce and the informal sector: What are the impacts felt by the MSWM workforce in municipalities and the waste picker in the informal sector? What kind of guidance and support has been provided by central government entities?

Innovations and New Approaches to MSWM

1. Circular economy principles: Going forward, what is the government's thinking on greater adoption of circular economy principles and lesser dependence on landfills?
2. Greater use of technology (cell phones, internet, and spatial analysis or GIS) in MSWM: To what extent is technology being leveraged for improving MSWM planning and service delivery and obtaining citizen feedback?
3. Innovations for behavior change: What is the thinking on options to be pursued for using technology and incentives for driving behavior change toward separation of MSW at source, reduction, reuse, and recycling?
4. Extended producer responsibility: Is the government pursuing options for extended producer responsibility as a means of improving recycling?

Appendix D. Borrower Comment

Remarques et Observations

Département de l'Environnement

Objet: Rapport du Groupe d'évaluation Indépendant du PNDM (PPD1 à PPD4)

Les remarques et recommandations du Département de l'Environnement sur le rapport cité en objet, se déclinent comme suit :

Remarques sur le constat

- Le flux de lixiviat peut être réduit voir évité si on adopte une approche de gestion intégrée avec la mise en place en amont d'un système de collecte sélectif (biflux) à la source et une technologie de traitement appropriée en aval comme le MBT(traitement mécano-biologiques). Les recettes générées à travers la valorisation des fractions organiques et inorganiques pourraient servir pour équilibrer le modèle économique de l'investissement (paragraphe 1.29).
- Pour le leadership et la coordination entre les départements impliqués dans la mise en œuvre du PNDM, ajouter le Département de l'Environnement en tant qu'acteur clé qui a également contribué vivement auprès du MI et du MEFRA à la réussite du programme (paragraphe 1.62).
- Signaler que les facteurs induisant les retards dans la mise en place des décharges contrôlées ont impacté la réalisation des projets de réhabilitation des décharges sauvages. En effet, la réhabilitation et la fermeture des décharges sauvages reste tributaire de la mise en service des décharges contrôlées et des CEV (paragraphe 1.41).
- L'intégration des centres de tri dans la chaîne de traitement ne peut être considérée comme étant une cause de l'augmentation des coûts d'exploitation sachant que ces installations génèrent des recettes supplémentaires (ventes des matières triées) et réduisent l'enfouissement (paragraphe 1.53 et 1.58).

Recommandations

- Appuyer la réflexion en cours pour la mise en place d'un acteur central (Agence Nationale ou Entreprise d'Etat, etc.) pour la gestion durable des déchets.

- Renforcer le cadre législatif et réglementaire (révision de la loi 28-00 et les textes d'applications : instauration de la REP, Gouvernance, planification au niveau régional, classification des décharges, Collecte sélective, valorisation des déchets, normalisation des produits dérivés, etc.).
- Normaliser et libéraliser le marché des produits dérivés (RdF, biodiesel, charbon vert, production d'électricité et chaleur, compost, etc.).
- Réviser le modèle économique actuel à travers le renforcement de l'appui de l'Etat, la promotion du Partenariat Public Privé (PPP), l'application du principe de la Responsabilité Elargie des Producteurs (REP) et la promotion de la fiscalité environnementale.
- Le budget réellement affecté dans le cadre du PNDM au volet Communication et sensibilisation a été très insuffisant ce qui a impacté, entre autres, l'atteinte des objectifs escomptés dudit programme. Il est primordial d'accorder ainsi la priorité requise pour ces aspects. Il est recommandé d'établir un Plan de communication avec des objectifs à court, moyen et long terme et mettre à disposition les moyens humains et financiers adéquats pour le mettre en œuvre et le cas échéant mettre en place des déclencheurs de financement relatifs à la communication et sensibilisation dans l'éventualité d'un nouveau programme d'Appui de la Banque.
- Promouvoir davantage le tri sélectif à la source (biflux), la réduction des déchets, le recyclage et la valorisation dans le cadre d'une économie circulaire.
- L'insertion sociale des trieurs informels a commencé par quelques initiatives de création de coopératives à l'amont (urbain) et à l'aval au niveau des décharges. Des efforts sont nécessaires pour passer de ces initiatives pilotes à une organisation formalisée bien structurée au niveau national dans le cadre de l'écosystème vert.
- Rechercher d'autres sources de financement (Fonds vert pour le climat, coopération internationale, etc...) et encourager davantage l'accès au marché Carbone.
- Renforcer les systèmes de contrôle de la conformité environnementale des installations.
- Donner l'importance également aux projets de réhabilitation et fermeture des décharges sauvages et d'éradication des points noirs des déchets ménagers et assimilés.