

User Manual

Data Collection Tool for Urban Solid Waste Management

Version 1.0

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Acronyms

Global Partnership on Output-Based Aid (GPOBA)
Global Methane Initiative (GMI)
Clinton Climate Initiative (CCI)
Climate and Clean Air Coalition (CCAC)
Results-Based Financing (RBF)
Output-Based Aid (OBA)
Public-Private Partnerships (PPP)

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Preface

This guide provides an overview of the Version 1.0 of the Data Collection Tool for Urban Solid Waste Management. This tool is intended for use by consultants, donor organizations, and solid waste staff as a framework for collecting and storing important solid waste data in a consistent manner to support interventions in the sector such as:

1. Development of solid waste master plans for cities,
2. Preparation and implementation of investment projects, including those using Result-based financing (RBF) approaches.
3. Identification of opportunities to reduce short-lived climate pollutants (SLCPs) emissions from the solid waste sector.

This tool was developed by the World Bank with a Technical Assistance Fund provided by [The Global Partnership for Out-Based Aid \(GPOBA\)](#). The tool has benefited from the technical contributions of the Solid Waste initiative of the [Climate and Clean Air Coalition \(CCAC\)](#)¹ and the [Global Methane Initiative \(GMI\)](#).

¹ The Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC) was launched by the United Nations Environment Programme (UNEP) and six countries on February 16, 2012. The solid waste initiative of CCAC comprises various organizations such as UNEP, US Department of State, USEPA, Environment Canada, CCI-C40, ISWA, Japan and The World Bank.

Background

Urbanization, exponential population growth and economic development in many countries are leading to a rapid increase in solid waste generation in urban areas. The World Bank projected that the cost to manage solid waste worldwide will increase dramatically from 205.4 billion dollars in 2010 to 375 billion dollars by 2025, with low income countries seeing the fastest increase (Hoornweg & Bhada-Tata, 2012). In addition, cost recovery potential for solid waste services is difficult due to affordability (particularly for the poor citizens), and unwillingness to pay in developing countries (Murad & Raquib, 2007). Partnerships with the private sector, while successful in many countries, have failed in many others due to complex political and institutional factors, and the limited possibility of cost recovery in the sector (Cointreau-Levine & Coad, 2000).

Poor solid waste management in urban areas contributes to a significant percentage of global emissions of methane and other short-lived climate pollutants (SLCPs) and is one of the major causes of flooding (Baker, 2012). Therefore, addressing global solid waste management challenges offers a range co-benefits at the local and global levels and could result in a significant economic rates of return through environmental and public health benefits, improved livability and city competitiveness.

Over the past decade, the World Bank and other Multinational Development Banks (MDBs) have seen their portfolio of investments in the solid waste sector grow as a result of the rising demand. The Global Partnership of Output-based Aid (GPOBA), a multi-donor partnership administrated by the World Bank was initiated in 2012 to pilot the use of result-based financing and output-based aid (RBF/OBA) instruments in the solid waste sector. Responding to the rising demand for new solid waste projects by the large number of partners requires common tools and approaches to better target the response, and to ensure consistency of the approach in ways that provides meaningful outcomes. A major issue undermining this goal is the lack of data and consistent data collection techniques in low and middle-income cities, which limits the availability of baseline data provided for organizations to develop interventions for the sector.

To overcome this challenge, this Solid Waste Data Collection Tool was developed as a framework to assist cities, consultants, and donors with collecting and storing important solid waste data in a consistent manner to support interventions. In addition, the tool includes two modules for collecting specific data related to methane and black carbon emissions from various waste management activities, and to evaluate the applicability of result-based financing to the solid waste sector.

Presentations of Data Collection Tool

Overview

The tabs comprising this tool could be categorized into three main groups:

- **The General/Rapid tab** for rapid assessment
- **A menu of specialized tabs** covering major activities in the solid waste sector such as collection, recycling, and diversion
- **Assessment and decision support tabs** comprising the OBA/RBF assessment tool, the Project Development Notes tab, and the Map and the photo tabs.

For a rapid assessment where the objective is to collect basic data to engage a dialogue with a city, the General/Rapid tab would suffice. Deeper assessment of the solid waste sector would, on the other hand, requires the use of one or more specialized tabs in addition to the General/Rapid tab. Figure 1 provides a snapshot of the tabs for various applications.

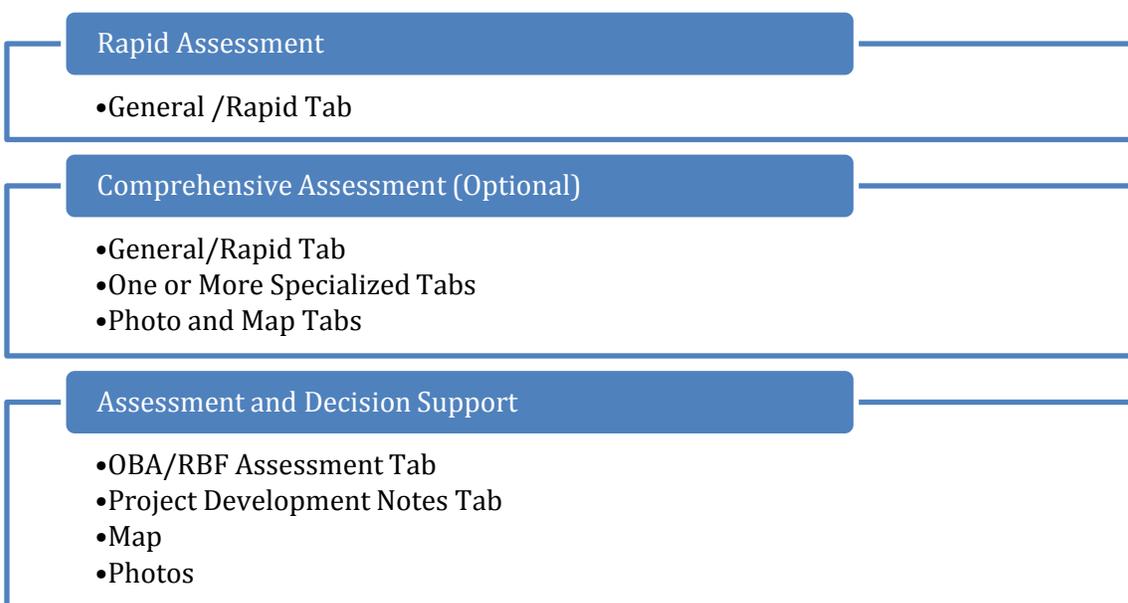


Figure 1: Applicability of the tabs per the level of assessment

The cells in the tool are color-coded as follows: White cells provide questions, instructions and units, while gray cells collect user inputs, which could be alphabetic, numeric, or a selection list. A column is provided for each tab to collect the source, and the year of the source, for each data point.

At the bottom of each tab, users will find an optional section to collect the data required to perform an assessment of Short-lived Climate Pollutants in the solid waste sector. Despite the fact that these questions are optional, the intention is to

emphasize the need to evaluate and assess the climatic benefit of integrated solid waste management.

General/Rapid Tab

Under this tab, the user is able to identify and provide essential data for the city's solid waste sector. The categories for this data collection sheet include geographical information, management and regulatory framework, and a summary of the city's facilities. This tab provides the framework for conducting a rapid and efficient assessment of a city's waste sector.

For users aiming to conduct a thorough study of the entire city's waste management value chain, collecting the data for the specialized tabs is recommended as a next step.

Specialized Tabs

These tabs cover the following activities along the solid waste value chain: waste collection, recycling, transfer station, landfill/dump (open or closed), composting, and waste-to-energy Tabs. These tabs allow the user to collect further information for the various activities along the value chain. Because each city has a unique solid waste structure, it may be necessary to duplicate or delete some of these tabs to better represent the city's solid waste sector. For example, a city with two landfills would duplicate the landfill tab for each landfill facility. The user should use their discretion when determining which tabs are applicable.

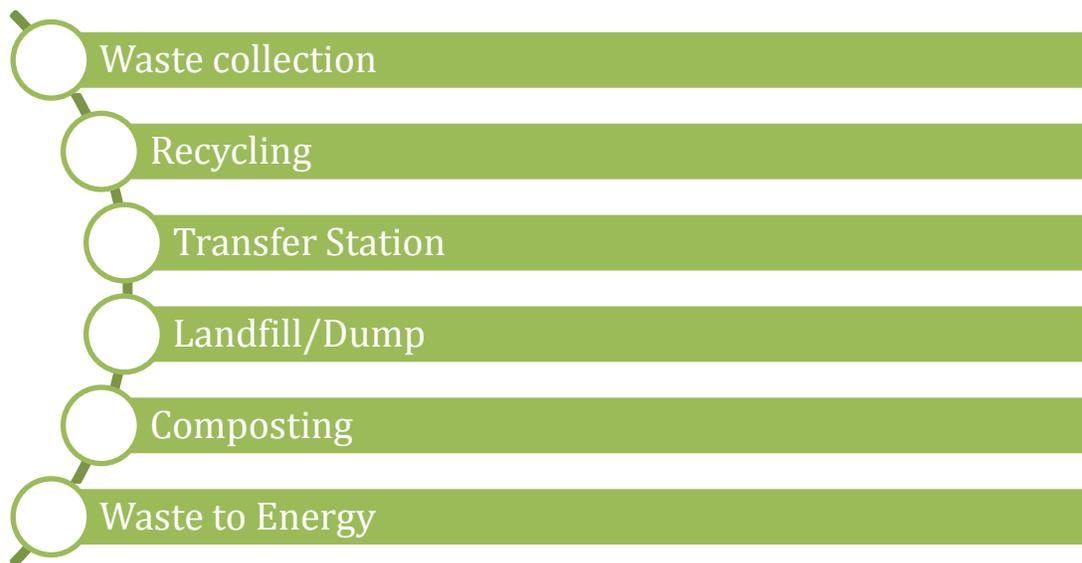


Figure 2: Menu of Specialized Tabs

Decision and Assessment Tabs

Project Development Notes: This tab provides a framework for designing specific project(s) at the end of the data collection process.

OBA/RBF Assessment Tab: This tab is an adaptation of the GPOBA solid waste assessment tool. The objective is to assess the opportunities and potential risks related to the implementation of an RBF/OBA project in the solid waste sector. The user is asked to consider key questions, and then select a color (red, yellow, or green) based on the level of risk associated identified. The color red represents the lowest/least favorable response, yellow represents a somewhat favorable response, and green represents the highest/most favorable response.

It should be noted that although a project may have mostly green and yellow responses, which may give the user a sense of confidence in the project's OBA/RBF feasibility, if there is a particular score for a question that is red, the user should try to prepare a remedial action to ensure to ensure that it does not become a hindrance during the life of the project.

Map and Photos Tabs: These tabs allow the user to import a map of the city, which could provide a visual representation of the solid waste facilities, and photographs of the various solid waste activities and facilities in the city.

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Printout of the Tool