

## **Executive Summary**

**Title:** Selective Waste Management and Waste Pickers' Organizations: Indicators and Sustainability Indices (*Gestão da Coleta Seletiva e Organizações de Catadores: Indicadores e Índices de Sustentabilidade*)

**Author(s):** Besen, G.R., Gunther, W.M.R., Ribeiro, H., Jacobi, P.R., Dias, S.M. 2016.

**Date:** 2016

**Publisher:** *Faculdade de Saúde Pública/Universidade de São Paulo*, São Paulo, Brazil

**Publication Type:** Research Guide

**Description:** Executive summary of research guide

## **Overview of Research Guide and Main Objectives**

The guide is based on the main findings of the report entitled: “Selective Waste Collection Project – Management models with and without waste pickers, advantages and disadvantages under the sustainability perspective” (*Projeto Coleta Seletiva; modelos de gestão com e sem inclusão de catadores, vantagens e desvantagens na perspectiva da sustentabilidade*).

The guide seeks to offer local governments, waste pickers' organizations and experts interested in solid waste collection tools for diagnosing, planning, evaluating and monitoring solid waste systems. The overall objective of the resources provided, including the process of testing and improving the referred to indicators and sustainability indices, is to strengthen the management of selective waste collection by focusing especially on the roles carried out by local governments and waste pickers' organizations. Thus, the guide stresses how indicators are essential in the processes of setting up selective waste systems that also seek socioeconomic, environmental and public health improvements.

The results are based on research carried out by the National Health Foundation (FUNASA, its acronym in Portuguese) and coordinated by the Environmental Health Department (*Departamento de Saúde Ambiental*) at the Public Health College (*Faculdade de Saúde Pública*) of the Federal University of São Paulo (*Universidade Federal de São Paulo – USP*) in a partnership with the Energy and Environment Institute (IEE/USP) and WIEGO. The research draws on previous research work initiated in 2007-2011 that also prioritized the testing of sustainability indicators with local governments and waste pickers' organizations. The proposed indicators were validated in consultation processes among experts, technical staff from municipalities, academics, consultants, NGOs supporting waste pickers and representatives of the National Movement of Waste Pickers (MNCR), as well as waste pickers through the Delphi method. In 2013, the research project entitled “Collective Waste: management models with and without the inclusion of waste pickers, advantages and disadvantages according to a sustainability perspective” sought to improve the indicators and applied them to 20 cities (11 with waste pickers and 9 without waste pickers) and 13 waste picker organizations in the states of São Paulo and Minas Gerais, Brazil. The research guide is thus an important tool that defines each of the indicators and how they can be used by different actors in solid waste management processes.

## **Background**

The research guide provides an overview of the selective waste system in Brazil and focuses on the impacts *local governments* and *waste pickers' organizations* can have in establishing more inclusive and efficient systems. With regard to local governments, the research guide covers the different models adopted across the country, as well as the advantages and disadvantages of each. With regard to organizations, the guide emphasizes some of the key points for including waste pickers as service providers in selective waste systems.

The guide recognizes the challenges in implementing the National Solid Waste Policy (PNRS, by its acronym in Portuguese), established by federal law no. 12.305 in 2010 in Brazil that seeks to regulate and strengthen selective waste collection throughout the country. One of the significant challenges the guide calls attention to is how local governments face obstacles to abide by the legislation, often resulting from a lack of use of sustainability indicators that permit a more accurate understanding of the implementation and evaluation of this service. The guide also notes that indicators are just as useful for waste pickers' organizations. This is particularly the case when considering how organizations could benefit from ways to evaluate their management process given their goal of being recognized as service providers and of improving their livelihoods and earnings.

Understanding the shifting dynamics involved in the process of implementing selective waste systems and the different types of relationship between governments and waste pickers' organizations across the country, the guide emphasizes that the indicators and sustainability indices must be standardized for comparative purposes, but also flexible enough for all users.

## **Sustainability Indicators for Selective Waste Collection**

The guide outlines 16 sustainability indicators for selective waste systems (ISCS by its acronym in Portuguese). They are divided into the following 5 groups: A) Institutional (4 indicators); B) Relations with Society (4); C) Efficiency (3); D) Work Conditions, including workers' health and safety (3); and E) Costs (2). These indicators can be used by local governments that include waste pickers in the system or by those that have chosen to hire private companies. Each indicator is interested in measuring a specific dimension of the 5 aforementioned categories and also provides a way to evaluate the dimensions based on whether they are highly favourable, favourable, unfavourable or highly unfavourable.

Broadly speaking, the four institutional indicators are interested in identifying the existence of an Integrated Solid Waste Plan (ISWP) , the nature of how it was implemented, the legal instruments that guide the dynamics between the local government and service providers, the scope of the service for the population, and the economic sustainability of managing the system.

An illustrative example of one of the indicators is the interest in *measuring* the existence and type of legal instruments that guide the local dynamics in the implementation of an Integrated Solid Waste Management System. The indicator also provides a means for *evaluating* the instrument based on a ranking from highly

favourable to highly unfavourable. The indicator establishes the following criteria in terms of legal instruments: a highly favourable situation involves the existence of contract for service provision, a favourable situation includes the existence of a social agreement with financial support to cooperatives, an unfavourable situation includes the existence of a social agreement without financial support and a highly unfavourable situation includes the lack of a contract or social agreement. The indicator referring to relations with society measures aspects such as the actions or activities related to educational campaigns on selective waste, the existence of channels for the participation of civil society in the selective waste management system, the number and diversity of partnerships articulated by local governments with regard to the system, and the inclusion of unorganized waste pickers.

As an example, the indicator for educational campaigns provides a list of activities that should be met. The indicator is measured by dividing the percentage of the number of requirements met by the number of desired requirements in order to get the system's percentage rate. It is then measured according to the aforementioned ranking system, being that a highly favourable scenario with educational campaign would involve meeting 80% or more of the listed activities, a favourable scenario would involve meeting 50.1% to 79.9% of the listed activities, an unfavourable scenario would involve meeting 20.1 to 50% of the listed activities and a highly unfavourable scenario would involve meeting less than 20% of the listed activities.

The indicator on efficiency seeks to measure the population's adhesion, the rates of waste recovery and the rates of rejected waste. In order to measure the rates, the guide provides a set of formulas, as well as a classification of these rates along the scale of highly favourable to highly unfavourable.

The indicator on work conditions includes dimensions such as work conditions for collecting waste, environmental conditions in sorting warehouses and worker's health and safety. For example, with regard to worker's health and safety, the guide lists seven desirable requirements as a way of measuring and evaluating this aspect. As the case with other indicators, it provides formulas, as well as a classification of these rates along the scale of highly favourable to highly unfavourable.

Finally, the indicator on costs is interested in measuring the costs of service collection and cost of selective waste collection versus the cost of regular waste collection and destination.

### **Sustainability Indicators for Waste Pickers' Organizations**

The guide outlines 21 sustainability indicators for waste pickers' organizations. They are divided into the following 5 groups: A) Legal/Institutional (4 indicators); B) Socioeconomic (2); C) Organizational (6); D) Operational Efficiency (5); and E) Work Conditions, including workers' health and safety (4). The table below lists the different indicators for each of the 5 categories.

The legal/institutional indicators seek to measure and evaluate the official registration of the organization, the legal instruments for guiding the relationship with the local government, the quality of partnerships and the diversification of partnerships. For each of these, a list of desired criteria is included as a means of guiding the process of

measuring and evaluating each dimension. For example, in order to evaluate the registration process of waste picker cooperatives, 19 requirements need to be met, whereas 9 requirements need to be met with regard to the process for waste picker associations. The guide provides specific formulas for measuring the indicators, as well as criteria for evaluation based on the scale of highly favourable to highly unfavourable.

The socioeconomic indicators are composed of two indicators: the average earnings by member and gender relations. The indicator on gender relations, for example, is interested in measuring gender equality within the organizations. In order to do so, it provides a list of four desired requirements. As with the other indicators, these indicators can be measured by the given formulas and evaluated by the same scale.

The organizational indicators measures specific aspects within an organization, including: self-management, capacity-building, participation in meetings, turnover rates, benefits for members, and the diversification of activities and services. With regard to the indicator on benefits for members, there are 12 desired criteria that an organization should meet, including aspects such as maternity leave, contribution to social pensions, a bank account in the name of the worker, health leave, literacy courses amongst others. As with the other indicators, the organizational indicators can be measured by the given formulas and evaluated by the scale ranging from highly favourable to highly unfavourable.

The operational efficiency indicator is interested in measuring the population's adhesion to the system, the rates of waste recovery, the rates of rejected waste, the self-sufficiency of equipment and vehicles and waste picker productivity. For example, the waste picker's productivity is measured by dividing the monthly average of materials sorted by the number of waste pickers. The monthly average of sorted materials is calculated by considering the previous six months of operation. The percentage is then evaluated according to the scale ranging from highly favourable to highly unfavourable.

Lastly, the work conditions indicator looks at four dimensions: work conditions for collecting dry selective waste, the environmental conditions for working, worker's health and safety and the use of personal protective equipment. As an example, in order to measure the use of personal protective equipment, there are six equipments considered essential for the worker. This indicator is then measured by dividing the number of members who use protective equipment by the total number of members. It is then evaluated according to the scale ranging from highly favourable to highly unfavourable.

In addition to a detailed description of each indicator, another highlight of the guide is that it offers an important tool in this monitoring process: a matrix of sustainability. This allows both local governments and waste pickers' organizations an opportunity to analyze where they have had the most successful and unsuccessful results. The matrix uses 16 indicators and according to the results it provides the different groups with an action plan for meeting objectives and improving their performance in terms of the specific indicators. The document gives step by step instructions on how to calculate the sustainability index, which can result in the creation of sustainability radar (p.53-54). The radar is an illustrative way to present either the local government or waste pickers' organizations' performance in terms of their sustainability and the possibilities for improvement.

Overall, by providing clear definitions of indicators and how to use them, the guide enables different actors in different contexts to more closely evaluate their role in strengthening a sustainable and inclusive model of selective waste collection.