Waste challenges and solutions to improve living conditions in Rio de Janeiro's favelas

Favela residents and waste pickers in Rio de Janeiro are daily exposed to decaying waste and inhumane working conditions. To achieve long-term change, the ignorance of legal responsibilities by market players needs to be addressed.

It hits you again, the disgusting smell! Imagine that every day when you leave your house, the first thing you see and smell is decaying old waste spread out in your neighborhood. This is the reality of many people living in Rio de Janeiro's informal settlements, also called favelas. On top of this, the only income for the poorest in these areas is from selling recyclable material collected from waste, forcing many of them to become waste pickers and have physical contact with waste on a daily basis. Some of these waste pickers organize themselves into so called 'cooperatives', which, together with individual waste pickers, make up the city's informal recycling system. According to this study, the municipal cleaning company COMLUR, responsible for the collection and treatment of all waste generated, are unable to successfully collect all waste mainly due to high transportation costs. Recycling is to a small degree carried out by COMLURB but most material is recycled thanks to the informal actors.



Accumulation of waste in a favela in Rio de Janeiro. Location: Complexo do Alemão. Photo: Emma Bergman 2/4/2019.

Though Brazilian law states that waste pickers should be integrated into the formal recycling system, the city of Rio de Janeiro only recycles 2% of generated waste. This can be compared to cities in other developing countries where the recycling rate in the informal sector can reach 20%. Through interviews and visits to favelas it became clear that the biggest issue with the system is that manufacturers, distributors and importers of most products, who are legally bound to invest in the system to enable and accelerate informal recycling activities for the urban poor, do not comply with the law. Thus, one key factor to increase recycling and improve the lives of waste pickers is increased and continuous funding of cooperatives to facilitate collection, separation and selling of materials. Funding could be done by the local government

who in turn has the right to be compensated by the legally bound market players. However, due to the historically slow progress of the waste management system, the informal sector is urged by the author to organize itself to strengthen its negotiation leverage and political position.



Separation of material at a waste picker cooperative in Rio de Janeiro Photo: Emma Bergman 20/5/2019

Furthermore, there are too few collection points and small containers in the favelas, leading to accumulation of waste in the streets. If the responsible manufacturers, distributors and importers owned up to their obligations, COMLURB would be able to focus in their main goal - to collect all waste - and thus improving environmental protection. To minimize the environmental effects of waste momentarily, favela residents should organize clean-ups, paint walls and plant flowers in areas where waste accumulates. Both the current study and examples from literature show that people take more care of what is beautiful, meaning that beautiful public spaces lead to less waste accumulation. To make a bigger impact, COMLURB could employ favela resident to keep the streets clean or informal workers can implement small, local collection systems for a community-adapted fee. Previous studies on informal settlements show that poorer households value living in a clean neighborhood enough to pay for it when it is not provided for free.

The study makes it possible for both inhabitants, politicians and international actors to get better knowledge about the waste situation in Rio de Janeiro and hopefully understand the needs of the people affected by the current system, and why it is important to do something about it.

## Acknowledgement

A big thank you to Theresa Williamson for giving me this opportunity and believing in my ideas and Ava Hoffman for guidance and support throughout my field work. I would also like to thank the rest of the fantastic Catalytic Communities' team for your expertise and fantastic work. I would like to direct a special thank you to all the incredible people I got the great honor to meet during the interviews and visits. Thank you for your hospitality, for taking time to participate and trusting me to get to know you and the work you do. Without you all, this thesis would not have been possible.

Name of author	Emma Bergman
Program	Environmental engineering (Ekosystemteknik)
Full name of thesis	Municipal Solid Waste Management in Informal Settlements – A multiple-case study of challenges and possibilities in the favelas and informal sector of Rio de Janeiro city
Project location and year of	Rio de Janeiro, Brazil, 2019
field work	
Date of publication	2019-12-09
University and faculty	Lund University, Faculty of engineering - Department of
	Environmental and Energy Systems Studies. Supervisor: Mikael
	Lantz
Collaboration organization	NGO Catalytic Communities. Supervisors: Theresa Williamson
in Rio de Janeiro	and Ava Hoffman