The State of Waste in India- by Chintan

Eighteen Years after the First National Laws

This year, 2018, marks 18 years since India got its first set of Solid Waste Rules. It marks an occasion to reflect how these 'adult' laws have fared. What have we done well? What shall we do next? The **State of Waste in India** deep dives into data and diverse perspectives, to locate some next steps.

A diverse set of contributors from very different walks of life—engineers, public health experts, industry professionals, social scientists, journalists, activists—helped in the writing of this book. Each brings their unique perspective and lens of not only understanding a specific problem but also present ways of solving it. The problem of waste is so huge that often it seems insurmountable. In designing this book, we kept in mind literary critic Kenneth Burke's famous dictum "A way of seeing is also a way of not seeing." By bringing in diverse perspectives, we hope that at the very least, readers will interrogate what they see, why they see it as well as think about what they don't see and why they don't see it.

This book is far from a comprehensive understanding or documentation of the range of problems that India currently faces in this sector. By the same token, just as the range, scale and scope of the problem is wide, so is the set of solutions on offer. The book is arranged into four main sections, bookended by an introduction and a conclusion. The first section titled "The Big Issues" focuses on six major contemporary issues related to waste and its management in India: data, health, regulatory landscape, technologies, informal sector, and waste materials that pose particularly difficult problems. A chapter is devoted to each of these issues.

Chapter 1 focuses on data. Reliable and accurate data is a fundamental need for the design and implementation of effective and efficient waste management systems. Yet, good data is very hard to come by. Not only is data hardly ever available, when it is available it is often conflicting. If good data is the need of the hour for improving waste management systems, then we are most definitely in deep trouble. In an interview, Pradeep Khandelwal and Arun Kumar, engineers from the East Delhi Municipal Corporation reiterate the need for good data for decision-making. They point out that even when data is available, analysis, access and sharing remain critical issues. When good data is available, it should not merely be an academic exercise. Instead, it should be used for influencing public behavior. This chapter provides three case studies from Delhi, Chennai and Varanasi where data has been used to inform decision-making. Accounting for waste management costs requires good financial data. This chapter includes a contribution that proposes a full lifecycle cost accounting approach for waste management.

Chapter 2 focuses on the relationship between waste, pollution and health.

There is little doubt that waste impacts the environment as well as human health. Recent scientific studies in India have brought to light critical evidence on how waste impacts human health. Unfortunately however, not only have government and the industry ignored the issue of chemical contamination, public health professionals and epidemiologists have also had very little to say. In an

interview, Dr. T.K. Joshi, formerly of the Maulana Azad Medical College confesses that even doctors are not trained to address health issues linked to waste, even though waste poses a massive health hazard in India not only in an immediate sense but also trans-generationally.

But just as waste impacts human health, it also pollutes the environment: land, water and air. Indeed, the two—human and environmental health—are deeply connected. In an interview, Marcus Eriksen of the 5 Gyres Institute reminds us of the problem of waste in our oceans, pointing out that the Bay of Bengal is the most polluted of the five gyres. The best way to fix the problem of plastic waste in the oceans is to reduce plastics. Till then, and for the plastics that are still used, a good way ahead is to hold the plastic industries responsible for making products that have value even after they are used, so that they can be recycled rather than disposed. Waste is a general hazard to human and environmental health, but the problem is even more serious for those who work with or handle waste. As a result, the need for health insurance for workers in this sector is absolutely urgent.

Chapter 3 focuses on the rules and the processes of rule-making that have come to govern waste in India, something the MOEFCC has been working on for, and strengthening, for 16 years. Starting in the early 1990s, India has a number of rules, policies, and guidance documents to govern various types of waste—municipal solid waste, bio-medical waste, battery waste, e-waste, and plastic waste—at the central government level. In addition, some state and municipal governments have also undertaken their own initiatives in an effort to implement the various laws. There have also been a number of court interventions, more recently in the National Green Tribunal, that have supplemented the legal framework. Despite the existence of these legal structures, implementation has been inadequate across the board. Dr. Lakshmi Raghupathy, an environmental expert, was involved in the drafting of the original solid waste management rules in 2000 with the MOEFCC. She recalls that plenty work was already being done in the field of waste management even before the PILs in the Supreme Court exploded and triggered research and analysis into the specific issue of municipal solid waste. Two years ago, the Ministry of Environment, Forests and Climate Change released the *Solid Waste Management Rules, 2016*, 16 years after the first set of rules were issued. While certain aspects of these rules are commendable, there are several challenges that need to be addressed if these rules are to achieve real change in improving waste management in India.

Chapter 4 deals with the issue of waste management technologies. Selecting the right technology for managing Indian waste can go a long way in helping urban local bodies (ULBs) address a growing problem. A range of technologies are available in the market but their suitability in the Indian context needs to be addressed before they are implemented. In an interview, the notable waste management expert P.U. Asnani, shares with us his experiences through his involvement with research, analysis and policy making in the Indian government. He highlights the importance of implementing the right technology for managing India's waste suggesting that waste-to-energy may not be the best option from technological as well as financial perspectives. The failure of the high profile waste-to-energy facility lays testimony to the technology's misfit within the Indian context. Residents in the vicinity of Delhi's only functional waste-to-energy facility in Okhla are opposing the plant because burning of unsegregated waste releases highly toxic pollutants, including dioxins and furans, and residual ash, a part of which is volatile, contains relatively high concentration of heavy metals - cadmium, mercury, lead and the like.

Mired in controversy, the plant has been taken to Court even as new such facilities continue to be approved for development.

Chapter 5 focuses on the role of the informal economy, increasingly recognized in recent years, of waste and recycling in India. The informal economy of waste includes a range of actors—those who collect, segregate, trade, and even reprocess recyclable materials from waste. Those at the bottom rung of the informal recycling value chain are variously referred to as wastepickers, scavengers, and rag pickers. This diverse and complex network of actors provides valuable services of waste collection which reduces costs for municipalities, and recycling which reduces our collective environmental burden. Despite the crucial role that they play, they remain socially, politically and economically marginalized. One of the crucial threats to their livelihoods stems from the recent privatization of waste management services. Even as privatization threatens informal sector livelihoods, organizations across the country have been able to achieve some successes in safeguarding wastepicker livelihoods by formalizing them as part of urban waste management systems.

Chapter 6 focuses on specific waste materials that pose unique waste management challenges. Some materials are toxic and pollute the environment as well as adversely impact health. Others can cause physical harm to those who handle such wastes. Yet others pose a challenge of non-recyclability. There are many policy approaches to deal with managing such waste materials. One such approach is the framework of extended producer responsibility (EPR) or the idea that producers are accountable for managing the end-of-life of the products they produce and sell. The first piece in this chapter provides an overview of the principle of EPR, the experience of other countries with implementing EPR, the current state of EPR in India and some recommendations for moving forward. The remainder of this chapter focuses on specific waste streams: e-waste, sanitary waste, plastic waste, compact fluorescent lamps (CFL) waste, construction and demolition (C&D) waste, slaughterhouse waste and end-of-life vehicles (ELVs). While each of these poses dire challenges, they also offer opportunities for socio-economically and environmentally just ways of handling them. Dealing with materials at the end of their useful life is one problem that can be addressed through innovative product redesign frameworks such as Cradle-to-Cradle.

Section two of this volume is titled "Ground Realities."

Chapter 7 focuses on the role that actors in the private sector—waste management companies—are increasingly playing in waste management. Municipalities across the country are facing a formidable challenge with regards to managing their waste. In order to ensure that cities are clean and compliant with increasingly stringent rules, municipalities are turning to private service providers. The government and international development institutions are also encouraging outsourcing as the most efficient way to deliver waste management services. As a result, many cities across the country have contracted with private firms over the past decade or so. But, the success of such partnerships between the public and

private sector is thus far questionable. Many cities that have outsourced services are having problems with the contractor because of poor or lack of performance according to contractual conditions. In an interview, M. Goutham Reddy, MD of Ramky Enviro Engineers Ltd provides a private sector perspective to the challenges of waste management privatization in India blaming the government for non-conformance and financial non-viability of those projects. But lack of standards and guidelines has led to irregularities and inconsistencies in contract writing and administration. At the same time, however, contracts also present an opportunity for informal sector inclusion. Currently, many contracts scarcely even mention the informal sector and are evaluated on the basis of lowest price. This is a disincentive for not only providing high quality services but also including the informal sector. If cities do not recognize the need to include the lower ranks of informal waste workers as part of 'privatization' initiatives, including by providing minimum on-the-job social protection guarantees, then privatization will largely remain the myth it started as, and Indian cities might never find a sustainable answer for their current development and increasing waste generation.

Chapter 8 examines some strategies that can be used to improve waste management systems in India. While the previous chapters of this volume have focused primarily on analyzing the current waste situation, this chapter is forward looking, exploring some possible, local solutions to the ever-growing problem of waste in India. This chapter discusses a range of solution options for various aspects of waste management: the need for source segregation, zero waste frameworks; and citizens' volunteerism in city cleanups.

The book ends with conclusions about a positive and tangible way forward.