



# Extended Producer Responsibility and Informal Waste Workers – From Integration to Sustainable Inclusion

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# Foreword



**Dr. Manisha Anantharaman**  
**Associate Professor, Saint Mary's College, USA**

The COVID-19 public health crisis has brought renewed attention to a longer-standing public health crisis ailing Indian cities, that of inadequate and unjust waste management systems. The social and environmental costs of waste are borne by those who are already oppressed and disadvantaged in Indian society. Communities living next to dumpsites, informal settlements without waste collection services, waste workers who toil with no personal protective equipment – and now exposed to the COVID-19 virus – suffer the most from the lack of waste management infrastructure in India. Their suffering parallels the suffering of the land, water and air, and of more-than-human life.

In the past decade, the Indian government, responding to pressure and advocacy by environmental organisations, has revised municipal, plastic and e-waste management rules to emphasise some “zero-waste” practices such as source segregation, recycling, composting and bioenergy to divert waste from landfills. The latest update to the suite of policies on waste are guidelines on Extended Producers Responsibility. Extended Producers Responsibility is a principle that seeks to hold the producers of waste accountable and responsible for the end-of-life of their products. It shifts the costs of waste management from the public to private actors, and in the process can drive innovation to reduce waste production through upstream changes in how things are designed and made. EPR is a critical part of a circular economy transition, which seeks to move our economy from a take-make-dispose model to one that closes material loops and minimizes waste generation.

This series examining the implications of India's Extended Producers Responsibility policy on the informal waste economy offers critical interventions that can refine and strengthen EPR policy in the coming year. Authored by individuals with expertise in environmental and resource sustainability, as well as extensive experience working alongside informal waste pickers, it articulates three key interventions. The first intervention is that EPR policy needs to be created with full participation from informal workers with multi-stakeholder participatory platforms created at the city, state and national-level. Secondly, EPR policy needs to be tailored to the diversity of materials that make up waste streams, as well as the diverse economic arrangements that exist to manage them in the informal economy. Getting this right will require input from informal waste workers, as these are the people who know India's waste best. Finally, building on this recognition, the policy should have explicit measures to protect and enhance already-existing informal waste livelihoods and economies by investing in public infrastructure and capacity building to improve the conditions of work and enhance resource recovery. Underpinning these efforts should be a commitment to fair remuneration alongside zero-waste principles.

Long maligned in mainstream policy circles, informal work and workers are the backbone of India's economy. The social and economic value of informal work is most apparent in waste economies. In cities across India, grassroots recyclers have built functioning value chains for recyclables, generating income for themselves, materials for other markets and diverting waste from landfills. Waste economies are complex, consisting of last-mile waste collectors; waste pickers and itinerant buyers, sorters, aggregators, scrap dealers, and small-scale artisanal recyclers. Relying upon accumulated, embodied knowledge, networks of kinship, solidarity and cooperation, as well as existing gaps in service provision, informal workers make their living by extracting value through closing material loops or extending the lifetimes of products.

In the past decade, thanks to concerted organising by a range of grassroots and member-based organisations, waste pickers and other informal waste workers are finally gaining recognition for the valuable environmental services they provide Indian cities. While an increasing number of policy documents list informal sector inclusion as a key goal for plastic and e-waste management policy, the conditions of this inclusion remain poorly understood or defined. Indeed, as several articles in this series show, the informal economy is an afterthought in many of these policies. And when inclusion is an afterthought, it can compound the exploitation that informal workers already face.

In the series opener, Pinky Chandran, Founding Member Solid Waste Management Roundtable (SWMRT) and Trustee, Hasiru Dala, chronicles the history of EPR policymaking in India, reviewing different iterations of the rules. She warns us that the guidelines were created with minimal input from organisations working with and in informal waste economies, and that over time, the commitment to phasing out single-use plastics in EPR policy has been watered down. Several articles in the series point out that the rising quantity of multilayered and single-use plastics is a detriment to the successful inclusion of informal actors into waste management systems. Those low or no value materials are difficult to collect, process and have no secondary markets, meaning that they have a high cost of recovery for no benefit. If "included" informal waste pickers are today responsabilised with the collection of all dry waste, including these no-value materials, they need to be compensated for their work, Nalini Shekar, Co-founder Hasiru Dala and Kabir Arora, National Coordinator, Alliance of Indian Wastepickers (AIW) argue in their essay.

Sumangali Krishnan, Chief Business Officer, GA Circular (GA), explains that this issue can be solved by creating artificial markets to enable cost-effective recovery of these materials, and that corporations can play a role in this by buying-back materials. Lubna Ananthakrishnan, Project Manager, SWaCH Plus, Pune, writing about a case study of a partnership between ITC and the SWaCH waste picker cooperative in Pune, echoes these arguments, while also raising the issue of financing and credit which disadvantages informal worker cooperatives in comparison with newly minted waste management companies that have easier access to credit.

Sonia Dias, WIEGO's Global Waste Specialist, offers insights from Brazil's experiences of informal sector inclusion, arguing for full participation of workers at various stages of policy-making. Essays by Prashu Singhal, Founder, Karo Sambhav, and Andrew Almack, Founder & CEO, Plastics for Change, present case studies of collaborations between multinational companies and informal actors, arguing that there are potential environmental and social win-wins to be realized through smart EPR and waste management policy.

The closing essay by Pinky Chandran, inspired by the insights of her colleague Krishna, a former child waste picker and operator of a Dry Waste Collection Centre in Bengaluru, is that EPR policy needs to be created with a more fine-grained understanding of the materiality and temporality of waste generation and an ethos of social responsibility. The knowledge and labor of informal waste workers must be recognized and rewarded, and not simply exploited. Waste producers must be held accountable. And the broader public should be educated about the social and ecological complexities of India's waste management systems.

Today, several new actors are entering the waste management space in India, looking to make money from waste. EPR guidelines favor new actors because they lack explicit provisions to value and remunerate informal waste workers. In the absence of investment in capacity building and in physical infrastructure, attempts to formalize and regularize informal waste economies will undo recycling activities, dispossess people of their livelihoods and produce greater precarity. This can be devastating at a time when COVID-19 has already increased poverty and hunger in India.

Existing efforts at setting up plastics recycling systems and enforcing EPR rules have shown limited success. The articles in this series warn us that a one size fits all policy created without the input and consideration of those who currently do the work is doomed for failure. For far too long India has depended on precarious, caste-oppressed workers to do its dirty work. Cleaning up waste chains, securing resources and protecting the environment will require bold action with a clear moral and ethical compass. One that prioritizes equity, health and wellbeing over growth or corporate profit.



# Part 1 : Setting the Scene



# Empower (ing) Informal Recycling Chain to get Extended Producer Responsibility Moving



*Pinky Chandran*

*A waste(rag) picker who picks up garbage early in the gray morning. Muttering darkly to herself/himself.. (s)he spears the remains of speeches and fragments of words with her/his stick, and throws them into her/his cart... (S)He is the morning garbage collector, but this morning is the morning of the day of the revolution.*

- *Benjamin Walter in his 1930 critique of Siegfried Kracauer's novel Die Angestellten, (The Salaried Masses)*

There is value in sifting through the remains of what we discard. And each act of sifting, collecting, sorting, grading, trading is a revolution of sorts. So what does this have to do with Extended Producers Responsibility (EPR)? The moment of truth came when my colleague Krishna, a former child waste picker and a manager of a Dry Waste Collection Centre in Bengaluru, made a statement at one of the meetings on Inclusive EPR. He said, "We talk about producers' responsibility and stewardship, in terms of environment and economic angle but there is a more pressing issue that needs to be addressed, that of social cost and justice." After all, waste is also a social priority, intricately connected to the sustainable development goals, culture and politics of the country. And the COVID-19 pandemic amplified the need for social-environmental stewardship for economic sustainability.

## EPR in India

In June 2020, the Ministry of Environment, Forest and Climate Change (MoEF&CC), released the Draft Uniform Framework for Extended Producers Responsibility under the Plastic Waste Management (PWM) Rules 2016. While this was the first time that such a document was released, India first introduced Extended Producers Responsibility (EPR) in 2011 under the Plastic Waste (Management and Handling) Rules, 2011 and E-Waste Management and Handling Rules, 2011. This was the result of the recommendations made by the Expert Committee set up to examine the comments and suggestions including economic instruments in the Draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009. The major changes suggested by the Committee involved (i) introducing a system of EPR for recycling plastic waste, (ii) requiring state and central fiscal policies to explicitly account for the plastic waste, (iii) introducing “explicit pricing” for all plastic carry bags sold, (iv) setting up a state level advisory body to advise and assist in monitoring the impact of these rules and the degree to which they are complied with by different sections of society, and (v) including informal sector actors such as waste pickers, in plastic waste management.<sup>1</sup>

The 2011 rules defined "Extended producer's responsibility (EPR)" as the responsibility of a manufacturer of plastic carry bags, and multilayered plastic pouches and sachets and the brand owners using such carry bags and multilayered plastic pouches and sachets for the ***environmentally sound management of the product until the end of its life***. The rules also defined multilayered plastic ( pouch or sachet) and defined the term 'waste pickers'<sup>2</sup> According to the 2011 Rules plastic waste was defined as any plastic product such as carry bags, pouches or [multilayered plastic pouch or sachet etc.], which have been discarded after use or after their intended life is over.

The PW (M & H) Rules 2011 put the onus on the municipal authority for setting up, operationalising and coordinating waste management systems, and working out the modalities of a mechanism based on EPR, for manufacturers and brand owners within the jurisdiction. This included setting up collection Centres for plastic waste, involving manufacturers by financing the

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<sup>1</sup> Report of the Expert Committee to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009 <http://www.indiaenvironmentportal.org.in/files/draft-plastic-rules-2009.pdf>

<sup>2</sup> "waste pickers" mean individuals or agencies, groups of individuals voluntarily engaged or authorised for picking of recyclable plastic waste. <https://cpcb.nic.in/displaypdf.php?id=cGxhc3RpY3dhc3RIL1BXTV9HYXpldHRILnBkZg==>

operations, channelising plastic waste to recyclers and engaging agencies of groups working in waste management including waste pickers. Unfortunately not much progress was made. The Central Pollution Control Board's Annual Report 2012-13 observed that municipal authorities had not set up any mechanism or engaged any agency for the management of plastic waste, and the trend continued.

Fast forward to 2016: the PWM Rules was declared as progressive and bold, as it put the focus of phasing out multilayered packaging plastics, within a time frame of two years, and proposed a comprehensive framework on EPR, which was otherwise left to the discretion of the municipal authorities. However the Plastic Waste Management (Amendment) Rules 2018, reversed the clause of phasing out non recyclable plastics and stated that 'multi-layered plastic which is non-recyclable or non-energy recoverable or with no alternate use' needs to be phased out. The reversal apart, the focus on EPR continued to gain momentum, given the Prime Minister's announcement of India's commitment to phase out Single Use Plastic by 2022.

The Ministry of Environment, Forests and Climate Change issued the Standard Guidelines for Single Use Plastics (SUPs) on 21st January 2019 to all States/UTs and Ministries. The guidelines detail legal options for States and Union Territories to prohibit SUPs, while acknowledging the States that have already done so. It also lists measures to promote eco-friendly alternatives and makes a reference to the Guidelines of Creation of Management Structure for Hazardous Substances that provides assistance for innovative technologies and treatments for different waste streams through a sub-scheme "SAMPATTI – Sustainable Management of Pre-owned Asset Through Trade Initiatives: Innovative solutions for municipal solid waste segregation, handling and treatment".<sup>3</sup> The SUP Guidelines further detail social awareness and public education and actions to be taken by Government Offices.

The disappointment in the guidelines is the section on EPR which states that certain single use plastics products, including PET bottles used for packaging beverages including water, may not require prohibitive actions as they come under the recycling/processing channels under EPR. The most disturbing note is on Multi Layered Packaging (MLP), which states as replacement technologies are not available, it is not suitable to phase out or prohibit the use of MLP at this

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<sup>3</sup> Guidelines for submission of proposals by the stakeholders under the Scheme "Creation of Management Structure for Hazardous Substances" <http://moef.gov.in/wp-content/uploads/2017/08/Scheme-guidelines.pdf>

stage and only those which are non-recyclable or non-energy recoverable should be phased out with no mention of explicit EPR obligation.

### **Why are the Draft Guidelines on EPR problematic?**

Going back to Krishna's statement on EPR, the draft guidelines on EPR are problematic as they completely ignore the informal waste workers and the actors in the recycling value chain.

### **No Consultation with waste pickers and other informal waste collectors, or representatives of waste pickers, informal recyclers**

The Action Taken Report of the Ministry of Environment, Forest and Climate Change (MoEFCC) based on the report of the Expert Committee on NGT Order in Him – Jagriti Case and the CPCB Interim Report on EPR framework<sup>4</sup> details steps undertaken to formulate a policy of EPR. The meeting 'National EPR framework under PWM Rules, 2018' on 25th October 2019, lists participants from industry bodies, government representatives and corporates. There was no inclusion of representatives of waste pickers and other informal recyclers. Any consultation in framing an EPR policy must be multi-stakeholder, for solutions to emerge. The policies need to be built from an understanding of collection on the ground, with people working in waste along with industry representatives, given that the majority of current recycling activity takes place in the informal sector.

### **Need for holistic approach to waste and resource policy**

The fundamental flaw in the design of the guidelines can be attributed to the rules – SWM Rules 2016, PWM Rules 2016, E-Waste Rules 2016, BMW Rules 2016, Hazardous Waste Management Rules 2016. All these rules have a singular focus on managing waste, without taking into account the need for resource efficiency and productivity, with improper enforcement of the rules and the livelihoods involved in these "already existing circular economies". The need for the hour is an umbrella policy of Resource Efficiency to be able to implement a life cycle based approach towards circular economy and adopt the six principles of Reduce, Reuse, Recycle, Refurbish,

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<sup>4</sup> Action Taken Report of MoEFCC based on the report of the Expert Committee on NGT order in Him-Jagriti Case [https://greentribunal.gov.in/sites/default/files/news\\_updates/Action%20Taken%20Report%20in%20OA.No.15%20of%202014-%20Him%20Jagriti.pdf](https://greentribunal.gov.in/sites/default/files/news_updates/Action%20Taken%20Report%20in%20OA.No.15%20of%202014-%20Him%20Jagriti.pdf)

Redesign and Remanufacture. A significant benefit of this approach is job creation in recycling sectors – directly leading to benefits socially, economically and environmentally. EPR then will move beyond being lip service, and will have accrued benefits across air, water and land, and hold companies responsible.

## Shifting Blame

In the twenty fifth Lok Sabha Report Standing Committee on Urban Development (2018-2019) on Solid Waste Management including Hazardous Waste, Medical Waste and E-Waste, the Ministry of Housing and Urban Affairs<sup>5</sup> notes Pune's model of bringing waste pickers into the city's solid waste management systems. In Chapter IV on Issues related Waste Collection, Segregation and Recycling, the discussion is on

- Need for setting up robust infrastructure and upgrading set up for Scrap Dealers Need for joint efforts by Corporates, Recyclers etc with State Governments/ULBs (c) Need for promoting segregation at Source
- Need for essential registration of Waste pickers by every Municipality and ensuring their safety
- Need for scientific collection and transportation of Solid Waste along with its time-bound target and monitoring Extended Producer Responsibility

It's interesting to note the submissions from ASSOCHAM, especially the representative from Pepsico: *While the representative makes a valid point on the need for resource conservation, and the need for well thought , collective, cohesive and equitable approach among key stakeholder, the submission ignores a key stakeholder the informal waste workers.*<sup>6</sup> The representative further states that urban local bodies in India lack infrastructure capability, which is a valid observation. However, the disconcerting argument that the representative makes is the challenge to successful EPR stems from the informal sector removing high recyclable revenue

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<sup>5</sup> Standing Committee Urban Development ( 2018-19) , Sixteenth Lok Sabha, Ministry of Housing and Urban Affairs, Solid Waste Management Including Hazardous Waste, medical Waste and E-Waste , Twenty Fifth Report, Lok Sabha Secretariat, 12 February, 2019, 23 Magha,1940 (Saka)  
[http://164.100.47.193/lssccommittee/Urban%20Development/16\\_Urban\\_Development\\_25.pdf](http://164.100.47.193/lssccommittee/Urban%20Development/16_Urban_Development_25.pdf)

<sup>6</sup> "Sir, we all know that urban solid waste management poses a great risk to the environment, society as well as offers an excellent opportunity for resource conservation that the society can really capitalize on. So, urban solid waste management needs a well thought , collective, cohesive and equitable approach among key stakeholders. The key stakeholders here are: urban local bodies, which are our Municipal Corporations, the regulators – CPCB and Ministry of Environment, businesses house corporate like us and community and consumer. All wastes begin its journey as a part of products that businesses produce for consumers to consume. So, that is the genesis of waste."

material, which in a way is scapegoating the informal sector, while completely keeping silent on the value of multilayered packaging material or the responsibility of the producer, manufacturer or brand owners to invest in redesign of the packaging products.

### **Need for Collective Inputs for Shared Progress**

The Guideline Document Uniform Framework for Extended Producers Responsibility – June 2020, makes for an interesting reading when read along with the Guidelines for Extended Producers Responsibility Implementation under PWM Rules, 2016 by NEPRA Environmental Solutions Private Limited<sup>7</sup>. The NEPRA document starts positively acknowledging the complexity of the market structure for production, buying and selling plastic packaging materials, and the presence of a number of formal and informal entities.

Unfortunately, most documents and reports point out the occupational and environmental hazards of informal waste collection without offering concrete solutions for infrastructure upgradation for better access to waste. The NEPRA document proposes a Fee-based Model, Collective & Individual PRO Model, and Individual Waste Management Agency Model/Plastic Credits Model. It also asserts that waste management systems already exist and EPR must act as a support to these systems, but contradicts itself when it recommends Collective PRO model and suggests a dual model – where the local services of waste collection and parallel collection are established. That apart, the document fails to put in place a vision for inclusion of waste pickers and other informal waste collectors, it fails to recognise the ability of informal aggregators/traders in the recycling space as experience to scale up to a PRO level.

Cut back to the MoEFCC's document, which proposes similar models as the NEPRA document, allowing for a top-down approach to solve the problem of waste, without clear inputs to inclusion of the informal sector. Under the PRO section, it merely states that the program shall promote the inclusion of waste pickers in a manner which improves their working conditions and incomes. The document quotes the Indore model of waste pickers selling at the MRF, which then discounts the contribution of waste pickers and ignores market dynamics allowing for the MRF to sell to

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<sup>7</sup> Guidelines for Extended Producer Responsibility (EPR) Implementation under Plastic Waste Management Rules, 2016, NEPRA <https://www.eprconnect.in/assets/pdf/pwm-rules/Draft%20Guidelines%20for%20EPR%20Implementation%20Plastic%20Waste%20Management%202016%20Producer%20Brand%20Owner%20Importer%20Manufacturer%20CPCB%20models%20framework%20credit%20takeback%20registration%20form1.pdf>

recyclers, instead of waste pickers being able to sell to the highest provider. This in a way excludes waste pickers from being able to collectively bargain for higher prices, the justification being that they are paid wages/salaries.

The document further complicates the functioning with duplication of roles for the ULB and the waste management agency. The responsibility of baseline data must rest with the Municipality, in line with what is proposed in Part 2 of the Manual on Municipal Solid Waste Management, which in Section 1.4, page 38, 39 under the Table 1.4 Matrix for Collection of Baseline Information Under Institutional Aspects specifies the need for identification of Stakeholders which includes lists of known recyclers in the ULB, approximate number of waste pickers and persons involved in the kabadi system within the ULB jurisdiction and identification of NGOs, voluntary groups, SHGs involved in SWM. There is also a lack of convergence document released in March 2018 by the Ministry of Housing and Urban Affairs, titled “Empowering marginalised groups – Convergence between SBM and DAY-NULM”. The document also lacks essential social and gender justice and governance provisions.

### **Why Inclusive EPR?**

Inclusion and Integration are often used interchangeably. However, they are not the same. Integration means mere acknowledgement of waste pickers and other informal waste collectors and must move beyond registering waste pickers and engaging registered waste pickers in collection – to expand the benefits to the entire downstream recycling industry. Merely co-opting waste pickers in an EPR plan threatens their livelihoods in earning fair compensation, lacks opportunities for social mobility, destroys natural waste markets, criminalises informal recycling and will perpetuate inequalities by privatisation, deepen discrimination and increase harassment.

Inclusion, on the other hand, means respecting different settings, systems, operations and the varied groups in the informal waste space and allowing for full participation in policy design and governance that affect their livelihoods. Inclusion moves beyond Register, Regulate and Tax, and looks at ways to improve technical capacity, access to finances, upgradation of infrastructure, skill upgradation, and social security. Inclusion also acknowledges that the informal economy varies across the country, respects the entrepreneurial nature of work and that a one size fits all policy will not serve any purpose of achieving the recycling mandate.

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*Pinky Chandran is an independent researcher, author and a community journalist. She co-founded Radio Active 90.4 MHz, Bangalore's first community radio station, in 2007. She is the founding member of the Solid Waste Management Roundtable (SWMRT), Bengaluru and a Trustee at Hasiru Dala. She has co-authored Valuing Urban Waste: The need for a comprehensive recycling policy Version 1 (2018), Hasiru Dala; , A Mirage: Assessment of Swachh Bharat Abhiyan and SWM Rules 2016: Wastepickers Perspectives across India, supported by Alliance of Indian Waste Pickers and IGSSS (2019); "Communicating the Sustainable Development Goals-A Toolkit for Community Radio Stations", developed by SMART and Supported by UNESCO and UNICEF (2020). Garbage inspires her to write poetry.*

*Note: This essay is an abridged version from the book Valuing Urban Waste: The need for a comprehensive Recycling Policy, Hasiru Dala Edition 2*

# Waste Pickers and Workers in the Informal Waste Industry: The Pillars of Extended Producers Responsibility



*Nalini Shekar & Kabir Arora*

A decade ago, the term 'Extended Producer Responsibility' (EPR) was either found in the textbooks of Environment Sciences or in the forgotten reports of many parliamentary committees. At that time as organisers of waste pickers and environmentalists, whenever we emphasised that the producers must pay for recycling or disposal of packaging material, we were ridiculed and mocked. People considered it an alien concept and difficult to implement in India.

Fast forward to 2021, and the National Green Tribunal has ordered the Union Ministry of Environment, Forest and Climate Change (MoEFCC) to frame guidelines for EPR. This is in response to the increasing public and international pressure to reduce plastic pollution and for resolving the crisis of waste management. Due to increased spotlight on plastic pollution, a lot of large Fast Moving Consumer Goods (FMCGs) companies are announcing plastic waste reduction targets. To take it forward, a few of them have post-production plastic recycling and disposal systems in place, as it is easier to collect and is mostly homogenous material. The real test for any EPR system is post-consumer plastic waste. Some plastic waste streams like PET Bottles, HDPE (water drain pipes, plastic jugs and jerry cans, chairs and tables) have functional and diverse recycling value chains. They do not pose a major challenge. It is the plastic material which brings in zero value i.e. non-recyclable multi-layered plastic packaging of chips and other edibles and shampoo and other toiletries' packaging, which is the biggest cause of concern. The given material is being collected and aggregated by many facilities operated by waste pickers organisations in cities like Bengaluru, Mumbai, Delhi, Pune and others. No buyer is coming

forward. The only available options (not the most eco-friendly or economically viable options) are to send it to cement kilns, where they use the given material as fuel for co-processing or for the construction of roads.

Some companies like Tetrapak, HUL and ITC have taken initiatives to set up systems for collection, recycling or disposal of post-consumer plastic. Most of these systems are voluntary, and are at a nascent scale. India's plastic waste problem is the size of the Antarctic Blue Whale (the largest mammal on the planet) and the given solutions are the size of an ant. We are not saying that this problem is so big that it cannot be solved, rather that the existing solutions are too small to bring any meaningful change.

In plastic waste management, the biggest problem in front of us is post-consumer non-recyclable and multi-layered plastic (including reject waste like diapers and sanitary pads), which has no takers in the market. Most of the FMCG companies are not in the business of plastic waste recycling and disposal. Considering the requirement of commitment and scale of operation, it will be very difficult for them to enter into the recycling business. In other words, they will be dependent on 'external agencies' to provide them this support. There is no better ally and partner than waste pickers' organisations and informal waste recycling businesses, which already have expertise in this area.

India is home to the world's largest recycling industry. To illustrate the scale of recycling in India, we are taking the example of Bengaluru city. On an average, 3,500 Metric Tons of plastic waste are traded every day. A significant part of this material is not even accounted for in the official estimates of waste generation in Bengaluru, and it is picked up by an army of unknown environmental warriors, waste pickers, sold to scrap dealers and from there to aggregators and at last to re-processors. There are around 95,000 workers in the informal waste recycling sector and a substantial number of them are women.

Waste pickers and other informal recyclers are subsidising the environmental mandate of the producers, consumers and the government. They are providing an important service and yet paid meagrely. Recognising their contribution and strength, both Solid & Plastic Waste Management Rules 2016 mandated their integration. The Bengaluru municipal authorities have involved waste pickers and other informal waste collectors in the door-to-door collection of dry waste (recyclable and non-recyclable inert waste) and operations of Dry Waste Collection Centres (waste sorting and aggregating facility set up at the municipal ward level). Many other corporations have instituted similar measures. The integration of waste pickers is an ongoing process and is

complementing the existing low cost informal waste recycling chain, providing important solutions, but existing in secrecy.

Most of the existing informal and formal recycling units- homes of waste-pickers used as personal sorting places, Dry Waste Collection Centres, Material Recovery Facilities, Scrap Shops, Aggregation Centres, Waste Material Godowns and Small Recycling factories – are functioning out of crumbling infrastructure, have less than fair remuneration and no safety net for the workers. The strength of the given system is its skilled work-force and ability to collect, sort and aggregate large amounts of plastic material in a short span of time.

Any proposed EPR system should be considerate of these realities and actors and push for their inclusion. Waste pickers and the informal waste recycling sector (with near to no physical infrastructure) at large contribute to the visual cleanliness of the city, safeguard the environment and provide jobs to the most marginalised. Thanks to the Swachh Bharat Abhiyaan and organising work done by many organisers, many cities have (like our own Bengaluru) waste pickers organisations, self-help groups and cooperatives in place. Some of our ally waste pickers organisations are undertaking large scale operations of collection and aggregation of various streams of waste. Some of us, including Hasiru Dala, have also partnered with a few FMCG companies for piloting and innovating EPR systems. All these actions are voluntary and are being undertaken as a goodwill gesture by the companies. Voluntary systems do not last long. This is why there is a push for a mandatory EPR system at the national level.

It is high time that those who are engaged in informal waste recycling for survival are recognised as entrepreneurs and supported through the proposed mandatory EPR system. There are few primary needs which require support through the EPR system. The current system of recycling may seem opaque to the eyes of the outsiders, especially those in the large FMCG companies. The most important requirement of EPR system is going to be transparency and traceability. FMCG companies are formulating targets and they would like to see results against their commitment. Transparency and traceability of material flow is also important to ensure that there is double accounting of the costs and materials sent for recycling and for avoiding leakage of material within the system. Opaque informal recycling systems and transparency seem to be distant twains, but they need to meet.

The regulatory regimes of labour, taxation, urban planning and pollution control have always scared informal recycling entrepreneurs, thanks to them, most of the informal recycling enterprises function under the constant fear of displacement and eviction. Therefore, they prefer

to work in hiding. If they are to be included in the EPR framework, they should be able to stop fearing the regulatory system. We as waste pickers organisations can help in that. We organise waste pickers and informal waste collectors for livelihood and social protection. We have networks in the informal recycling supply chains. We can be that bridge which can connect the informal waste recycling sector with the FMCG companies.

To be a bridge, the first thing we ask for is the seat on the table (as equals) where the knitty-gritty of the EPR system is discussed and decided. Second is capacity building and infrastructure upgradation. An EPR system needs elements of transparency and traceability in place. This will be a common expectation of any prospective FMCG company that is seeking to partner with waste pickers organisations and through them connecting with the informal waste supply chains. As a part of EPR, we would like the financial and intellectual investments to be made in training sessions for waste pickers organisations and other actors in informal waste supply chains on ways to bring in elements of transparency and traceability as well as understanding of regulatory regimes to make the lives of informal enterprises easy. One of the major strengths of waste pickers organisations is undertaking frequent training sessions and workshops on a large scale. Thanks to the emphasis on organising and skill-up-gradation for better vocation, many waste pickers have developed innovative methodologies for facilitation of workshops and training. Recognising our strength in training and facilitation of workshops, various government bodies and consortiums of private actors including think tanks have regularly approached us for training officials of urban and rural local bodies' officers and other workers in waste management facilities. A financial and intellectual investment in existing training systems of waste pickers organisations can create spaces for collaboration and innovation.

The current infrastructure for recycling including the units operated by waste pickers organisations are rudimentary and dilapidated. It requires up-gradation of technology as well as physical infrastructure. An investment in the infrastructure of recycling in consultation with waste pickers organisations and other actors in the informal recycling sector is needed. Waste management, including plastic waste management, is a domain of urban and rural local bodies, their participation in decision making for investments in the sector is a must.

The third and the most important expectation is to focus on post-consumer non-recyclable material and fair remuneration for its collection, aggregation and transportation. Most streams of plastic waste materials have some or other form of recycling going on, even though one cannot be sure of fair remuneration. What we as waste pickers organisations seek is that we start with

collection, aggregation and recycling of post-consumer non-recyclable materials and set up standards of fair remuneration. If we are able to set up fair standards of engagement with the waste pickers organisations, it will boost the confidence of the informal waste recycling sector at large and pursue them to join the system.

All the three requirements: representation and consultation, capacity building and infrastructure upgradation, and fair remuneration, have emerged from long deliberations undertaken by the waste pickers organisations and other actors in the informal recycling supply chains. If these three basic requirements are satisfied, then India will have an outstanding EPR model.

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## Part 2: Materials Matter



# Flexible Plastic Packaging: Want Not, Waste Not, But How?



*Sumangali Krishnan*

**Recovery of Post Consumer Plastic Packaging.** Plastics in packaging are actively being targeted in a bid to prevent them from ending up in the ocean or landfills and dumpsites. To stem this flow, we must either stop consuming plastic or actively ensure that the plastic once used is captured in a way that does not harm the environment. In recent years, there has been a sizable focus on the second effort, with efforts to boost recycling awareness and the resources being deployed towards the recycling and recovery of packaging.

For some plastic types such as PET bottles, a tenuous value chain exists in developing economies, where the informal sector collects these materials for a small price and it is then processed into flakes or pellets to be reintroduced into the economy. As economies develop, there is less incentive to collect these materials unless there is an increase in the monetary incentive. In developing nations in South and South-East Asia, informal collection systems and low tech recycling technologies have allowed for the recycling not only domestically of post-consumer plastic, but also of plastic waste imported from other countries.

**Post Consumer Plastic Waste Value Chain.** As more and more packaging manufacturers are called upon to take responsibility for their packaging, many are turning to the existing plastic recycling value chains in developing economies to collect and process their post consumer packaging. The additional resources deployed for increased collection is great for higher value plastics such as PET, which suffers from the challenges of low profit margin. However, systems

are challenged when it comes to flexible and multi-layer packaging. The reasons can be broken down according to the typical steps of a recycling value chain:

**DISPOSAL:** When disposed/littered into the environment, this packaging is harder to retrieve and pick out given the size (generally smaller, hard to grip) and weight (flies away). When disposed mixed with other wet or unsanitary waste, it is both difficult and sometimes unsafe to retrieve out of the mix. It must ideally be collected separately, or at worst mixed with other clean and dry plastic waste. This requires compliance from the consumer/ disposer and is very rarely implemented.

**COLLECTION:** The waste collectors, formal or informal, must be properly incentivised to ensure collection of the flexible and multilayer packaging. This incentive must cover the additional effort of collection (small and scattered pieces of packaging), the lack of a market (very few technologies accept flexible packaging) and the challenging logistics of such packaging (it is difficult to store and challenging to pack down). When collected as part of mixed plastic waste, it requires a sorting facility where it can be sorted, weighed and stored for transportation. This effort must take into account the opportunity cost of other materials that have a higher market value.

**TRANSPORTATION AND LOGISTICS:** Lightweight packaging must be stuffed into sacks with considerable effort and compacted and stored to arrive at a reasonable tonnage. This takes up valuable space at limited sorting facilities. The cost of transportation to a processing facility – regardless of processing technology – is another additional cost, and one that must be borne by the technology provider or a program sponsor – unlike other high value plastics the market price for this material (if any) will not cover transportation costs.

**RECOVERY/RECYCLING:** Technologies to process flexible packaging are still in development, have specific feedstock requirements and sometimes additional costs to ensure that the feedstock meets this requirement. This includes cleaning and preprocessing at RDF facilities, cement kilns or pyrolysis plants. Feedstock that does not meet these requirements must be disposed safely to a landfill at the cost of the technology provider.

**ADMINISTRATIVE FEES:** Because flexible and multilayer packaging do not have a natural market, each of the above steps must be initiated and managed by one or more agencies. To

build transparency and accountability, these agencies must perform additional tasks of data collection, service coordination, transfer of funds, and data collection and reporting.

Despite these challenges, many efforts to collect and process flexibles and multilayer packaging have been undertaken throughout the region. Despite best efforts, the cost of recovering flexible and multilayer packaging has been expensive and has **no profit** margin associated with it.

**Examples from the region.** Plastic Credit Exchange in the Philippines collects flexible packaging for approximately 8-10 cents per kilo. This is the minimum amount required to cover the cost of collection and transfer to a processing facility. In a study conducted by Thailand, the suggested monetary incentive for collection of flexible packaging by an existing provider was 16 cents per kilogram. In Myanmar, given the lower labour costs, the cost was lower at approximately 6 cents per kilogram. In Indonesia, programs and efforts have been carried out at a range 10 - 16 cents per kilogram depending on the nature of the effort.

**The cost of recovery for Flexible and Multilayer Packaging is not small.** Creating an artificial market for these materials is the first step in ensuring collection and recovery – this artificial market must at minimum standardise the above listed costs at around 10 to 20 cents per kilo depending on the local context. Even where the monetary costs have been covered by a sponsor, each of the organisations engaged in the collection and processing of flexibles and multilayer packaging have indicated the insufficiency of funds and continued challenges with implementation of these efforts.

The general challenges of waste collection and recycling management in developing countries is a hurdle for even the high value waste materials. Without economic and other support, it is even more difficult for flexible packaging. Once a scalable collection model is established, additional technologies and solutions can be explored.

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*As the Chief Business Officer at GA Circular (GA) has developed and led various research, policy, behaviour change and industry led interventions aimed at developing a Circular Economy framework for South East Asia.*

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# Reflections on EPR-Systems Targeting Multi-layered Plastics



*Lubna Anantkrishnan*

The impending roll-out of the Extended Producers Responsibility (EPR) Framework seems, at face value, to be a positive step towards tackling the global plastic crisis. However, failing to safeguard the interests of informal waste workers may lead a well-intentioned policy to have a detrimental effect on millions of livelihoods. From SWaCH's ongoing work on multi-layered plastic (MLP) collection in Pune, I hope to offer reflections on designing inclusive EPR systems.

There are several reasons that multi-layered plastics are (largely) not handled by the existing informal recycling sector. First and foremost, multi-layered plastics, as the name suggests, are composed of several different layers and grades of plastic, and sometimes with other materials like metal (the inner lining of chips packets, for example). This mixture of materials is technologically challenging to separate for commercial recycling, and even fairs poorly as fodder for environmentally undesirable end-of-life technologies like pyrolysis/plastic-to-fuel/etc. So, buyers for multi-layered plastics are few and far between, and are typically unable to offer a good price of these materials. Cement plants and other end-of-life processors even charge a tipping fee to accept this material. This means that there is little to no market value for this material.

Even if value is created for multi-layered plastics, through EPR-based interventions or the presence of a nearby processing plant, the material may still not find its way into the informal waste sector. In addition to having low (if any) market value, this material is extremely light and voluminous which makes it logistically un-viable to handle in the existing informal market. Waste pickers rarely have the luxury to store large volumes of recyclables to sell to scrap dealers, and in what little space they do have it is the denser, higher value materials that make the cut. Since these plastics are primarily used in food packaging, they often invite rodents, making them even

less desirable to recover and store. Scrap dealers face similar opportunity costs, and choose to leave out multi-layered plastics from the menu of materials they deal in.

In Pune, the SWaCH-ITC Ltd initiative is an example of an EPR-based system designed to ensure the inclusion of waste pickers and informal waste workers. This system buys MLP directly and daily from over 1,000 waste pickers through a fleet of mobile collection vehicles. The intervention was designed to minimise the need for storage and transport of MLP by waste pickers, and incentivised recovery through a fair per kilogram price of Rs. 4. Currently, this system is being reshaped to integrate informal scrap dealers. The presence of SWaCH and its integration into the city's formal waste management system ensured that waste pickers were consulted and integrated in this system. However, Pune is not representative of the rest of India in terms of waste picker organisation.

In places without waste picker organisation, a crucial, albeit challenging first step of EPR should be to earmark funds for mapping informal sector actors. Guidance on this can be shared by organisations like the Alliance of Indian Waste Pickers. Once these actors are mapped, EPR systems can be designed to complement the existing informal sector and bridge gaps through industry intervention where necessary.

Extended Producers Responsibility-based interventions can be designed to address these challenges in a way that strengthens the existing informal waste sector. EPR legislation for highly recyclable plastics like PET, HDPE, PP and LDPE, which are handled effectively by the informal sector, should be limited to strengthening this sector to maintain and report data on waste handled. Setting up centralised, private collection streams for these materials may be simpler for corporates, but will destroy the livelihoods of all the waste pickers and informal recycling sector actors who will be unable to survive without these viable materials.

With a focus on low value and non-recyclable materials like MLP, EPR interventions can be designed to strengthen the informal waste sector to viably handle these materials. The most straightforward way to do this is to increase the market value for MLP through corporate intervention. This value creation can take a few different forms. In Pune, this is done through an MoU between SWaCH (waste picker cooperative) and ITC Ltd (corporate partner) with a mutually agreed minimum per kilogram rate of purchase for this material. Another approach is for corporations to set up or invest in technology that can recycle or generate higher value products from large volumes of MLP. The value creation could also be done artificially, by assuring recyclers an assured minimum selling price. This would create a natural economy for the material.

However, the physical and chemical properties of MLP make it difficult to raise the value high enough to overcome the logistical challenges of sorting and storing it.

Corporates can additionally intervene to bridge the remaining gaps in the informal sector, such as safe storage spaces for waste pickers to sort and store materials, support to scrap shops allowing frequent purchases of MLP, strengthening scrap dealers to maintain data for traceability, and fair compensation to waste pickers and scrap dealers for their environmental contribution. This can be done in partnership with waste picker organisations (where they exist), or with ULBs directly. Formalisation of informal entities like scrap dealers, aggregators and wholesalers entail both set-up and ongoing costs which may severely impact the financial viability of these entities. Plastic producers can step in to subsidise these costs and invest in capacity building for these entities, in exchange for data on materials handled by these entities.

The availability of local recyclers who can buy continuous and large quantities of MLP is a key part of keeping the system viable. This lower the need for aggregation, the less risk there is of loss in material quality (which may occur due to rodent infestation, rotting of small quantities of food remnants, etc.). Local recyclers also cut down the most inefficient part of the MLP chain – transportation. The onus of ensuring the availability of local sinks for MLP should rest with the plastic producers. Mechanisms should be in place for corporates to continue buying MLP in case processing plants shut down or stop accepting MLP. The effective responsibility to ensure that MLP is bought by processors should not be shifted onto the informal waste sector, or waste picker organisations.

From an overall system perspective, inclusive EPR interventions should account for the limited ability of informal waste workers (or waste picker organisations) to provide long lines of credit to formal recyclers and to the plastic producing industry. These sectors often function with large volumes of payment and long lines of credit that the informal sector actors, even after capacity building interventions, may be unable to provide. Even a formal waste picker collective like SWaCH in Pune struggles to provide ITC Ltd the credit they require to process payments. Further, the appropriate level of funding by plastic producers should be determined based on a matrix of context specific factors. Inclusiveness and level of informal sector integration, type of recycling/processing, availability of local recyclers/processors, type of material handled, etc. will affect the system cost. More inclusive, environmentally desirable systems can be encouraged through a plastic credit system with varying weightage based on system design. This will create incentives to design systems with better environmental, economic and social impacts and prevent system cost from being the primary factor that dictates corporate investment.

In tandem with this, legislation requiring phasing out non-recyclable materials like MLP, and mandating absorption of recycled plastic by plastic producers is essential. Processes like plastic-to-oil, pyrolysis, plastic-to-road and waste-to-energy should not stand in as permanent solutions to handling non-recyclable materials. Achievable short, medium and long-term targets for completely phasing out these materials should be laid out by the EPR framework, including strict penalties for non-compliance. Similarly, the use of virgin plastics should be phased out in favour of using 100% recycled plastic in the long run. This complementary legislation will support the continued recycling of highly recyclable plastics and reduce the introduction of new virgin plastic into our environment.

The existing informal waste economy is composed of millions of informal and decentralised actors working on very narrow margins in difficult conditions. While setting up such systems from scratch may be challenging, supporting these natural economies is the most socially and economically equitable for producers to take responsibility for the life cycle costs of the materials they produce.

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## **Part 3: Lessons Learned and the Way Forward**



# Brazil's Extended Producer Responsibility and its Interface with Waste Pickers



*Sonia Dias*

The recycling industry since its early beginning had always relied on the work carried out by informal recycling workers in Brazil, the “catadores de materiais recicláveis” (pickers of recyclables). As household waste collection falls under the responsibility of municipalities<sup>8</sup>, the informal sector in Brazil works primarily reclaiming recyclables either as autonomous workers or linked to cooperatives and associations.

Since the 1990's there was an increase in the number of organised waste pickers into cooperatives and/or associations and also an increase in the support these organisations received from the federal, state, and local governments especially during the period of the national mobilisation promoted by the waste and citizenship forum<sup>9</sup>. The creation of the National Movement of Waste Pickers of Brazil – the MNCR was an important landmark that enabled these workers to mobilise and vocalise their demands and influence policy making. This article reviews the Brazilian Extended Producer Responsibility program (EPR), the so-called reverse logistics system in its interface with organised waste pickers.

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<sup>8</sup> Service is executed either by municipal refuse collectors, or by private contractors or in joint ventures between municipal workers and private contractors.

<sup>9</sup> For an account of progressive policies in Brazil see <https://www.wiego.org/publications/waste-and-citizenship-forums-%E2%80%93-achievements-and-limitations>

## The Genesis and Main Features

One of the key advances in waste management in Brazil which impacts waste pickers was the approval, in 2010, of Law #12305<sup>10</sup> that instituted the National Solid Waste Management Policy (PNRS in its acronym in Portuguese). This Law represented a victory for the sanitation sector and waste pickers activists in many ways and especially for the recognition of waste pickers' role in solid waste management (SWM). The concept of “shared responsibility”<sup>11</sup> for collection and disposal of solid wastes generated by industrial and commercial sectors was embedded in the PNRS. The PNRS contained an EPR provision, referred to as reverse logistics system (RLS) that not only recognised the role of waste picker cooperatives but it also stated that corporations should integrate coops in their recycling schemes as services providers.

The concept of shared responsibility embedded in the PNRS was central to the reverse logistics system, making the generator responsible for the destination of the product after the consumption, ensuring the return of recyclables to the productive chain in ways that can increase waste pickers' activity. According to the law, producers, retailers, importers, and distributors from tyres, lubricating oils, fluorescent lamps, pesticides, batteries, electric and electronic products, and from the packaging industry need to ensure that products are disposed of safely at the end of their lifetime. For that the law established that a system should be developed including collection, recycling, re-use or environmentally safe disposal through the establishment of industry agreements (Sector Agreements<sup>12</sup>) between participants of reverse logistics systems of these prioritized areas. The other two instruments through which RLS can be established are through regulation (decrees) by the public sector<sup>13</sup> and Commitment Terms.

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<sup>10</sup> For an English version of the law see <https://www.wiego.org/sites/default/files/resources/files/Pereira-Brazilian-Waste-Policy.pdf> . For further reading on Brazil's reverse logistics see CEMPRE publications at [cempre.org.br](http://cempre.org.br) and <https://digital.detritusjournal.com/articles/inclusive-packaging-recycling-systems-improving-sustainable-waste-management-for-a-circular-economy/380>

<sup>11</sup> Differently from the European model based on the concept of “extended responsibility” Brazil's system is based on the concept of “shared responsibility” lying there one of the loopholes in the system as it creates room for industry to avoid fulfilling its responsibility given insufficient clarity on roles.

<sup>12</sup> The Sector Agreement is a contract between the Ministry of the Environment and companies (e.g. manufacturers, retailers) of a certain economic sector, which defines the scope, targets, terms, geographical coverage, and operational details of the reverse logistic (Act 12.305/2010, articles 3, I; 33 and 34. Decree 7404/2010, article 23). As the industry opposed the legislation, in the law making process the legislators proposed the establishment of these agreements was a way to reduce the opposition of the industry and thus strengthen consensus making.

<sup>13</sup> The federal government established specific regulation for reverse logistics for batteries, tyres, medicines, lubricants oils, and pesticides.

The government delegated to the private sector the task of proposing Sector Agreements specifying how the industry should comply with the law. Therefore, on 4th July 2012, the Ministry of the Environment issued a public call for manufacturers, importers, distributors, and vendors to propose the Sector Agreements.

For the packaging industry the proposal chosen was the one submitted by the Business Coalition (“Coalisão Empresarial”) so by November 2015 the Packaging Sector Agreement was finally signed by 20 signatories representing over 3,000 producers and manufacturers which formed the Coalition. Several intermediary groups represented these signatories for the purposes of negotiating further iterations of the agreement and carrying out various aspects of reverse logistics such as the non-profit Business Commitment for Recycling – CEMPRE<sup>14</sup>, the National Institute of Non-Ferrous Scrap and Iron and Steel Processors – INESFA, the Brazilian Packaging Association – ABRE; The National Association of Waste pickers – ANCAT which is the technical army of the National Movement of Waste Pickers coops (MNCR) amongst other organisations<sup>15</sup>.

The two systems that affects waste pickers more directly is the Sector Agreement on packaging and the Commitment Term signed for steel packaging, the latter signed in 2018 and the former in 2015<sup>16</sup>. Besides monitoring materials and packaging recuperated some of the responsibilities of the Coalition is to support waste pickers coops in increasing their productive capacity, acquisition of waste processing and sorting equipment for coops, capacity building, provision of collection containers (voluntary collection points), purchasing of recyclables from coops, and awareness campaigns. For reverse logistics systems associations and organisations of waste pickers can prove advantageous to guarantee the supply chain in the recycling industry as these workers are involved in collection, transportation, sorting, pre-processing and selling of materials in the value chain. Industry and municipal<sup>17</sup> lead segregation at source programs are both very important to facilitate the takeback of post consumption products through the reverse logistics channels.

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<sup>14</sup>CEMPRE is a non-profit formed by large corporations such as Coca-Cola, Danone, Procter & Gamble etc whose mission is to promote recycling. This non-profit was responsible for coordination of corporations’ participation in the reverse logistics system and relationship between the Coalition and the Ministry of the Environment with regards the Sector Agreement until 2019 and since then coordination is done by the Coalition itself.

<sup>15</sup> According to ANCAT there are 1,829 organisations (cooperatives or associations) of waste pickers distributed across 986 municipalities in Brazil (Anuário da Reciclagem, 2020).

<sup>16</sup> The first phase of the Sector Agreement on packaging benefitted 502 waste picker cooperatives across the country in a variety of projects and for the steel packaging 50 cooperatives were involved (Anuário da Reciclagem, 2020). The second phase of the packaging agreement is currently under negotiation.

<sup>17</sup> Even though the law makes it mandatory that municipalities implement segregation at source programs only 38% of the urban population in Brazil is serviced by municipal programs (Anuário da Reciclagem, 2020). This is one of the challenges regarding the expansion of the reverse logistics systems. Municipalities that implement source segregation may do so in three ways: 1. contracting out cooperatives to do collection and

Industries can implement internal segregation at source programs within their premises and also engage the population to return back post-consumer products by installing recycling containers in supermarkets and other places. Many industries have developed their own programs in which they engage with the waste pickers' technical association ANCAT in dedicated programs to support infrastructure and subsidies for coops as part of their reverse logistics systems, such as ABIPHEC<sup>18</sup>, Danone's Novo Ciclo project<sup>19</sup>, Tetrapak, ABRABE<sup>20</sup>, and others.

## Towards Greater Inclusivity – Social Mobilisation

The design and implementation of EPR systems are very complex as it requires mastery of concepts and tools of traditional logistics management in addition to knowledge on materials management and flows, introduction of processes for allocating different destinations to wastes produced such as reuse, recycling, remanufacturing etc. It also requires infrastructure, trained workforce and political coordination of actors. Brazil's EPR system – the reverse logistics – is an attempt to address inclusivity of informal waste pickers and in doing so created avenues that have proved useful to that goal. It has been observed that one of the advances is that waste pickers coops have been supported to expand their activities, to implement quality control processes, to have access to equipment for their operations, and establish contracts with the industry.

Some of the challenges regarding the Brazilian system are worth noting, however. The National SW Policy which instituted the RLS recommended recycling as a preferential method of waste disposal in the waste hierarchy. This means that recycling is not mandatory which weakens its implementation given that the legislator did not stipulate what is the defining criteria to decide

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sorting, 2. contracting private enterprises for the collection and by involving waste pickers coops for the sorting and classification, 3. contract the private sector for all services (in spite of the law that includes coops as service providers). Many municipalities adopt a mixed system in which there is door to door collection of recyclables and also a drop system with recycling containers in public areas. Quality of materials separated by the population is of great concern. Thus there is still too much to be done to expand municipal segregation at source programs throughout Brazil and environmental education of citizens in order to improve the quality of recyclables. This would greatly benefit waste pickers cooperatives involved as service providers in municipal collection programs by improving working conditions (reducing health risks) and increasing their income. **Although municipalities play a crucial role in solid waste management they were not part of the Sector Agreements which for some analysts was a weakness of Brazil's EPR system.**

<sup>18</sup> The Brazilian Association of Cosmetics, Toiletry and Fragrance Industry has a dedicated program of capacity building, payment for services and infrastructure support that involves around 150 coops in Brazil totaling 5,000 benefitted waste pickers. See <http://maoparaofuturo.org.br/>

<sup>19</sup> This project is part of Danone's Ecosystem Fund and aims at expanding segregation at source programs while strengthening waste pickers coops operational activities, and providing capacity building on business development, mediation and conflict resolution, and policy dialogues with public authorities. Danone is part of the Coalition (Sector Agreement) but also develops its own supporting activities with coops before the RLS was implemented as part of its social corporate responsibility projects. In spite of many critiques towards Danone's SCR projects in other countries, participating waste pickers in Novo Ciclo's project in Brazil have given positive accounts about their intervention to this author (Sonia Dias files – interview with Rede Sul network leader, 25.01.21).

<sup>20</sup> Association of Beverage Industry. See <https://www.abrabe.org.br/responsabilidade-social/ecogesto/>

what is the most suitable waste disposal method to be adopted. This has impacts on how SW is managed both by municipalities and also by the industry. Another issue is the fact that the Sector Agreements are administrative contracts that rely on consensus building, i.e. parties are not forced to sign it. This has been pointed out by some analysts as a weakness in the RLS as it makes room for free riders. Lack of clarity in the roles of who is responsible for what in the RLS is one of the key issues as well. Several analysts point out also to the fact that the process of forming the Sector Agreements did not officially include municipal governments which are at the end responsible for the implementation of municipal segregation at source systems in Brazilian cities<sup>21</sup>. This has created confusion regarding who is responsible for what in waste management. Should not the industry also co-participate with the municipality in paying waste pickers for collection services given the importance of this phase in terms of enabling the redirection of materials to the industry? There is no clarity about criteria regarding payment for services to waste picker coops by the industry leading to unbalance in the negotiation power between parties. As it is now the Sector Agreements benefit organised waste pickers but leave behind unorganised waste pickers which are still the majority of workers in this sector group.

As actors are to engage in negotiations for the second phase of the packaging Sector, it is important that discussions move towards resolving the inappropriate distinction between municipal segregation at source systems and reverse logistics as in the first phase of the Agreement it is up to the industry to decide what counts for RLS and what does not which affects, therefore, what the industry finds itself responsible for funding for. In the contexts where municipalities invest in segregation at source schemes with cooperatives (investing in sorting facilities, equipment etc.), this means that they are subsidising the industry, some experts and municipalities claim. Resolving this is an important challenge for the next phase of the Agreement.

Last year the National Solid Waste Policy that instituted many mechanisms to support social inclusion of waste pickers, amongst them an inclusive shared responsibility system – the reverse logistics – completed 10 years since its approval. In spite of all the advancements that this policy brought about for inclusive solid waste systems, one of its greatest challenges is to expand inclusivity in the reverse logistics systems with more transparency and clearer rules of remuneration of waste pickers. It is hoped that social mobilisation of waste pickers and their

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<sup>21</sup> Interview with Gina Rizpah Besen (Sonia Dias research files).

supporters are able to push inclusivity forward in spite of the anti-democratic nature of Brazil's current government<sup>22</sup>.

## VOICES FROM THE GROUND

**Neli Medeiros from Redesol network** (a second level cooperative of 14 coops), states how relevant the “reverse logistics is as this system enables materials to return back to the industry instead of being disposed of at landfills. In the RLS for glass there is an agreement with the industry to implement a specific route to pay the waste pickers coops for glass packaging. Cooperatives have signed contracts with the industry and this is very important for our income. What we need to do now is to push for systems that include autonomous waste pickers as well, not only organised ones” (interview, 24.01.2021).

**Luenia from second level cooperative Rede Sul:** “the positive impact on waste pickers is that we are now an important piece in the recycling process, however, involvement of waste pickers is deemed as “preferential” which creates room for many businesses to bypass inclusion of waste pickers. The “Novo Ciclo” (Danone) program was a pioneer program that helped us to understand the value chain better and to improve management process and joint commercialization of recyclables to achieve better prices in the market. It enabled a great learning process.”

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Sonia Maria Dias has been WIEGO's Waste Specialist since 2008. *A sociologist by training, Sonia refers to herself as a “garbologist” who specialises in solid waste management. She has been active in this field since 1985 in Brazil, one of the world's most progressive countries in integrating waste pickers into formal solid waste management systems. Sonia has focused her work on integrating social aspects into the technical planning of waste collection and recycling. She has promoted social inclusion, gender equity and occupational health in waste forums worldwide.*

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<sup>22</sup> Given the authoritarian nature of the current government there are fears that the government will legislate by decree only and create solutions that bypass waste pickers coops in benefit of large scale middlemen.

*Sonia's hands-on experience encompasses: work as a public officer at the Municipal Cleansing Agency in Belo Horizonte, Brazil; voluntary work for the NGO INSEA supporting the organisation of waste pickers, and social activism for the Waste and Citizenship For and for the Observatory for Inclusive Recycling (ORIS). Before joining WIEGO, she was a consultant of the World Bank's Integrated Solid Waste and Carbon Finance Project and an Eisenhower Fellow for the Common Interest Program on Challenges of Urbanization.*

# Informal Sector Integral to the Success of India Inc's Waste Management Initiatives



*Pranshu Singhal*

*2020 and the pandemic has forced us to re-evaluate and reconsider how we deal with our environment and sustainability issues. Organisations, globally, had to pivot their plans to adapt to the new normal while balancing their SDG ambitions. The pandemic also impacted India's waste management sector. In this paradigm shift, it has been made clear that frontline waste workers remain one of the most important elements of the entire waste management ecosystem – and will continue to remain so. Systemic solutions which address the needs of the informal sector and leverage their strengths will provide us with a pathway to solve some of our biggest environmental challenges.*

It is not unknown that India and developing countries have a vast reliance on the informal sector for waste management. The informal sector jobs – sometimes built upon generations of families in the same trade and personal relationships between consumers and traders – are now facing a significant shift. This is happening in the foreground of changing consumption patterns and regulations which are trying to formalise the waste management sector. In some ways, these traditional jobs – *our kabadiwallahs and kachrawallahs* – are what empower our citizens to maintain a significantly lesser per capita carbon footprint than various developed countries. It is also those in the informal sector who continued waste collection amidst the pandemic, even while established supply chain systems broke down, becoming the backbone of urban waste disposal systems. It is quite ironic then as our consumption pattern grows, it is also increasing the potential for displacement of jobs for lakhs of people engaged in the sector.

India is one of the largest waste generators in the world. In 2016, Extended Producers Responsibility (EPR) as a legislation came to the fore for the first time in the country. In its essence, EPR mandates brands and producers to be responsible for the end-of-life treatment of their product i.e. it *extends* a producer's responsibility beyond the sale of the product and allots financial costs and/or responsibility of physical infrastructure for its end-of-life management. First coined by my mentor, Professor Thomas Lindqvist in 1990, EPR was designed with an aim of creating upstream changes i.e., system and design related improvements as well as downstream changes i.e., improved collection, treatment and utilisation of secondary materials from the dead product.

Producers are at the centre of this policy instrument because they know their product the best and can drive systemic changes in the most effective manner. It should be clarified that producers do not and cannot have all of the responsibilities in an EPR framework. There are many contributors in the waste management ecosystem. EPR can be successful only when duties are allocated to various actors in the product value chain, including consumers, recyclers, collectors and there is a level playing field for these stakeholders. Furthermore, in a country like ours, EPR needs to be inherently inclusive and contributions, especially of the informal sector, cannot be overlooked. Waste management industry has an immense potential to create legitimate, green jobs.

In 2017, we formed Karo Sambhav with a goal of providing a sustainable, inclusive and scalable solution for brands that can fulfil their e-waste EPR mandate, as per the EWM Rules. Led by technology thought leaders, Karo Sambhav functions as a producer-led organisation which attempts to fulfil an ambitious vision of transforming the waste management industry and provide fair value to all actors. In September 2019, an Industry Coalition of 30+ companies announced the set-up of a new 'Asia's Largest Packaging Waste Management Venture' in partnership with Karo Sambhav. Over a period of three years, this venture will operate over 125 material recovery facilities, collect over half a million tons of plastic waste by engaging over 2,500 aggregators.

There were 2 key components of our work that we identified to be critical for the success of the EPR frameworks that we have designed for e-waste and plastic waste management:

- **Complete transparency and visibility of our value chain:** We wanted to ensure that our members had access to complete information and operations of Karo Sambhav. We

co-created the processes and programmes with our founding members – Apple, Dell, HP and Lenovo. We attribute our current success to this strong foundation and thought leadership of these brands.

- **Inclusion of the informal sector in a way that champions the EWM Rules:** The EWM Rules do not make a reference to informal sector workers directly. We wanted to work towards sustaining these livelihoods dependent on the sector and help them in their transition for more stable sources of income. This allowed us to tap the informal sector for bulk quantities of e-waste and ensure the collection targets for producers could be met. While we worked on changing consumer behaviours, we learnt that the shift in waste procurement from waste collectors to consumers directly will need to be gradual. We did this by upskilling and building capacity of waste collectors on EWM Rules, providing support with GST registrations and overall building trust and relationships with various stakeholders in the sector.

In the past 4 years of our operations, we have observed deep insights and learnings from having worked directly in the heart of the informal sector. The informal waste management sector, while informal, is not necessarily unorganised. Actors across multiple levels of the waste hierarchy have direct and indirect networks with waste generators i.e. consumers. The depth and breadth of these networks and connections are unmatched by any formal collection system in India. Last-mile waste collectors, though at the bottom of the pyramid, are on the frontlines of waste collection and have direct access to consumers. Plagued by socio-economic factors, they are not able to leverage this access in the most efficient manner. They are influenced by the market dynamics which are set by perceived financial value in different types of waste streams. This also directly influences what waste is able to enter the formal recycling value chain. For example, a PET bottle has more value than an MLP wrapper. Hence, low-value plastics end up getting filtered out of the systems at source itself, negatively influencing the possibilities of innovations and development of an entire value chain. The gap between waste collectors' contribution to the waste value chain and how well they are integrated in the system is quite wide. Hence, it is important to have a significant effort in engaging and educating the sector to enable them to become a stronger voice in the waste management ecosystem.

The recent Guideline Document on Uniform Framework for Extended Producers Responsibility (Under Plastic Waste Management Rules 2016) is a welcome step in this regard. For the first time, there is a proposed legislation which directly acknowledges the need for inclusion of waste pickers in a manner that improves their working conditions and incomes. We believe that this is

an important step in fulfilling the spirit of Extended Producers Responsibility-based Rules. There are also other positive measures mentioned in the Guideline Document which will have a systemic impact on waste pickers' involvement in EPR:

- Focus on traceability of waste and transparency in operations. This will help bring visibility on the impact and contribution of waste collectors in the ecosystem.
- Digital systems for capturing EPR plans of producers, document trails/proofs will allow quantification of impact, better monitoring of compliances and driving efficiencies within programmes. Data-driven decisions can be taken about waste sources and waste hotspots. This will also ensure traceability and legitimacy of waste movement.
- Registration of all stakeholders on one platform will allow a smoother transition of informal sector workers into legitimate livelihoods.
- Identifying and acknowledging the various existing collection channels including the informal channels will utilise the strengths of the waste pickers and the informal sector and unlock the various quantities of waste with them for scientific recycling.

An impactful implementation of EPR requires creation of win-win scenarios for various stakeholders in the system and holding *all* stakeholders accountable. Government interventions, which clarify the roles of various stakeholders and create harmonised monitoring mechanisms, can accelerate some of the above initiatives. This will directly help in increasing the participation of the informal sector in formal waste management initiatives. These interventions could include:

1. EPR based legislations (EWM Rules, PWM Rules) include a provision which allows informal sector actors to become legitimate collection channels
2. Establishing and implementing standards for the entire waste management and recycling value chain
3. Facilitating traceability in processes to track material flows
4. Enabling full transparency of the costs of EPR compliance. This will stop the race to the bottom and enable development of value-adding systems and processes which will help the whole sector to raise the bar and avoid exploitation of waste collectors.

EPR is a huge opportunity for the informal sector to become an active part of India's journey to become a leader in sustainable waste management. As a social enterprise, we will continue to leverage this opportunity and work in tandem with our peers in the informal sector.

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*Pranshu is the Founder of Karo Sambhav, an organisation that enables producer brands to close material loops by collecting and recycling waste related to their products. It is developing socially responsible and financially viable circular solutions by collaborating with disintegrated players across waste value chains. It designs and implements transformative Extended Producer Responsibility programmes for electronics waste and plastic waste.*

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# Eight Reasons Why Decentralized Waste Management is Best for Emerging Economies



*Andrew Almack*

The global waste crisis is rapidly growing. With waste generation estimated to increase to 3.4 billion tonnes by 2050, the effectiveness of systems that manage this waste have become vitally important to prevent environmental, health-based and societal issues. While developed nations have adopted centralised systems to manage their waste, developing nations have long been dependent on decentralised waste management systems functioning in an informal waste economy. Integration of the informal sector to the waste sector structure increases waste collection and recycling capacity as well as contributing to poverty reduction and increased quality of life.

## **1. A Culture of Circularity**

India is extremely blessed to have a functioning network of informal waste collectors, kabadiwalas and aggregators that work cohesively despite how decentralised their network is. Having tried and tested their methods for decades, the circular economy has been embedded in the culture and the resourcefulness of these players - ensuring the effectiveness of their system.

## **2. Better Quality**

While seemingly counter-intuitive, the reality is that the most advanced technological advancements that have been made in waste segregation still can't compare with the

ability of trained and skilled workers segregating waste material. Therefore, the quality of the material making its way through informal supply chains tends to be much higher than waste that is sorted by machines in centralised systems – which often costs millions of dollars.

### **3. Investing in small scale entrepreneurs**

The sector is deeply entrepreneurial and decentralised. The waste pickers often recruit from the ranks of migrants and urban poor, therefore the emphasis of any policy should be on inclusion – improving the safety, health, efficiency and wages of the waste pickers, while working to integrate the value of their collection into a more holistic waste management system. The performance of waste pickers could be greatly improved with capability building, access to capital and basic tools, a reliable and source-segregated waste stream, and cooperation from municipalities. Any proposed integrated waste system strategy should be designed with meaningful consultation with waste pickers and the nonprofit institutions that support them to ensure their interests are protected and the project implementation is holistic.

### **4. More Efficient**

These informal systems have proven to be far more efficient than their formal systems at resource recovery – boasting certain advantages in specific urban areas such as slums, where they have far more experience.

### **5. Less Transportation Costs**

Decentralised systems see waste sorted and graded at a community level instead of being transported many kilometers to a centralised hub. This results in transportation costs being reduced considerably – making it far more cost effective.

### **6. Fewer Landfills**

Many large centralised waste management contractors tend to run successful business models by sending the waste they collect straight to landfills – earning them a tipping fee. This often happens to be more profitable than having to cover the cost of collection, transport, segregation and aggregation but at the same time, results in less material entering the circular economy and contributes to the growing pollution crisis. Informal waste systems inherently do not have this issue.

## 7. Anti-Corruption

The waste management system has gained a global reputation for fostering corruption with the rights to large waste management contracts being used for political leverage. Decentralised systems therefore, help create resilience against such monopolistic and corrupt practices.

## 8. Social Change

At Plastics For Change, we believe that waste can be used as a resource to create positive change. By supporting and empowering these decentralised systems, emerging economies can do just that – by helping build the livelihoods of the players in these economies, many of whom have been socially marginalised.

The fact that centralised waste management contracts tend to exclude individuals from these communities, due to barriers such as illiteracy, make it even more important to ensure that their livelihoods are protected.

Apart from these salient reasons, there is also the simple fact that these informal economies have been the backbone of the waste management in emerging economies for generations – and so abandoning them now would be reprehensible.

Having listed its benefits, it must also be acknowledged that these informal waste economies are far from perfect and have a number of important issues that need addressing. However, instead of casting it aside for its problems, the benefits listed above prove that it would be far better for emerging economies to invest in these informal systems and develop their capabilities.

Therefore, legislation like emerging EPR laws should embrace these decentralised systems by facilitating investment into the development of its infrastructure. Such an act would go a long way in helping create a more sustainable and inclusive waste management system that is capable and effective in dealing with the global waste crisis.

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*Andrew Almack: As the Founder/CEO of Plastics For Change, Andrew's role is to make it easy for brands and manufacturers to transition from virgin to recycled plastic.*

*Plastics For Change has developed an ethical sourcing platform that connects waste-pickers to global markets. Our fair trade certified supply chains ensure a consistent supply of high quality recycled plastic for brands. This initiative is about creating better livelihoods for the urban poor while keeping plastic out of the ocean.*

*Andrew has catalysed several global brands and manufacturers to replace the use of virgin plastic with fair trade recycled plastic, thereby immediately improving the social and environmental impact of their products.*

# The Way Forward



*Pinky Chandran*

*“Existing efforts at setting up plastics recycling systems and enforcing EPR rules have shown limited success. This analysis shows that a one size fits all policy created without the input and consideration of those who currently do the work is doomed for failure. For too long India has depended on precarious, caste-oppressed workers to do its dirty work. Cleaning up waste chains, securing resources and protecting the environment will require bold and inclusive actions.”*

- Manisha Anantharaman

Inclusive EPR needs to be built around the following principles:

## **Principle of Preventive Action**

- **Prevention of Waste:** While designing an EPR framework, moving up the waste hierarchy model must be applied. Important for this is to redesign the packaging materials, with waste prevention as the core principle. The framework must incentivise prevention
- **Zero Waste to Landfill:** EPR schemes must ensure that no dry waste or biodegradable waste reaches the landfill, with strict action on those defaulting at all levels – consumers, corporations, and urban local bodies. An EPR framework must also explore Zero Waste to Landfill Certification in the long run, where the onus is on recycling, rather than energy recovery as a process.

## **Principle of Cooperation**

- **Participatory Platforms:** Any system must be inclusive of all stakeholders and not just

top-down. The need is for a more consultative and participatory model of policy making.

- **Prioritising Partnerships with ‘real’ waste picker organisations:** Waste picker organisations are those who have the term wastepicker incorporated in their articles of association/Trust Deed/Bye laws etc and have been working on the ground for a minimum of two years. A grassroots approach factors in milestones at each level.
- **Increasing public awareness** and programs to promote segregation and change perceptions of the informal waste economy

### **Principle of Sustainable Development Goals**

- **Investments in Infrastructure:** There is a need to move beyond creating parallel infrastructure like Material Recovery Facilities (MRFs). All current waste management infrastructure needs to be upgraded – both at the municipal level and the informal recycling markets.
- **Recognising Complexities and Supporting Material Flow Supply Chain:** EPR that supports informal material flow, and support extended by ensuring price stability, when market price falls, investments in improving entrepreneurial capacity and business acumen, and equitable distribution of profits across the recycling value chain
- **Recognising that formalisation is not a panacea for inclusion** and there is need for gender and social justice provisions. Formalisation is also beyond registration of waste pickers; it is not a one step process. Equally important is to recognise the hybrid economy that exists around plastic waste management – in the form of scrap shops, informal waste markets, and informal recycling hubs. Microentrepreneurship needs to be recognised, valued and enhanced. Opportunities for independent waste pickers and recyclers must be mapped out
- **Dispute resolution system:** Mechanisms for inclusion, across stakeholders must have robust mechanism to handle disputes
- **Move to a Repair and Rent Economy:** Mandating recycled plastics in production and move towards repair, rent economy

### **Precautionary Principles**

- Recognising the problems to tackle low value waste, bulky waste materials and design systems of EPR that goes beyond chemical recycling, energy recovery, and thermal treatment

- Holding corporations responsible for the 'Green Pledges of Reducing Plastic Footprint', in line with waste hierarchy, to avoid greenwashing

In conclusion, I repeat what Krishna articulated, "With the right support, we (waste pickers and other informal recyclers), can become key enablers in solving the plastic problem. We need to be invited to the table, to discuss policies that will affect our livelihood and until you see as partners in this, the problem is not going anywhere."

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### **Pinky Chandran**

Pinky Chandran is an independent researcher, author and a community journalist. She co-founded Radio Active 90.4, MHz Bangalore's first community radio station, in 2007. She is the founding member of the Solid Waste Management Roundtable (SWMRT), Bengaluru and a Trustee at Hasiru Dala. She has co-authored *Valuing Urban Waste: The need for a comprehensive recycling policy* Version 1 (2018), Hasiru Dala; , *A Mirage: Assessment of Swachh Bharat Abhiyan and SWM Rules 2016: Wastepickers Perspectives across India*, supported by Alliance of Indian Waste Pickers and IGSSS ( 2019); "Communicating the Sustainable Development Goals-A Toolkit for Community Radio Stations", developed by SMART and Supported by UNESCO and UNICEF ( 2020). Garbage inspires her to write poetry.

*Note: This essay is an abridged version from the book Valuing Urban Waste: The need for a comprehensive Recycling Policy, Hasiru Dala Edition 2*



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