

SOLID WASTE MANAGEMENT LANDSCAPE STUDY

Avenues for philanthropic intervention

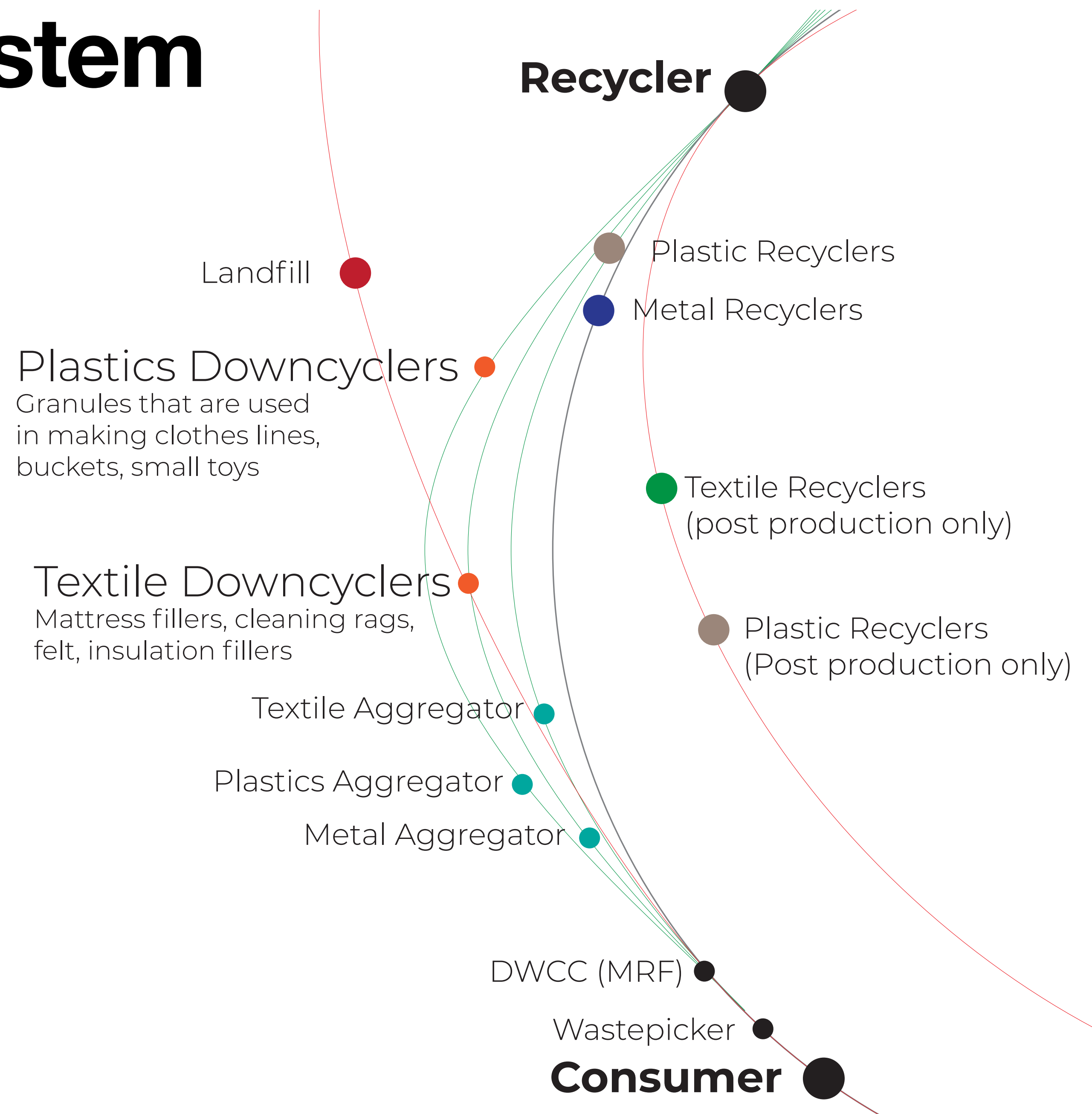


April 2023

Solid Waste Ecosystem



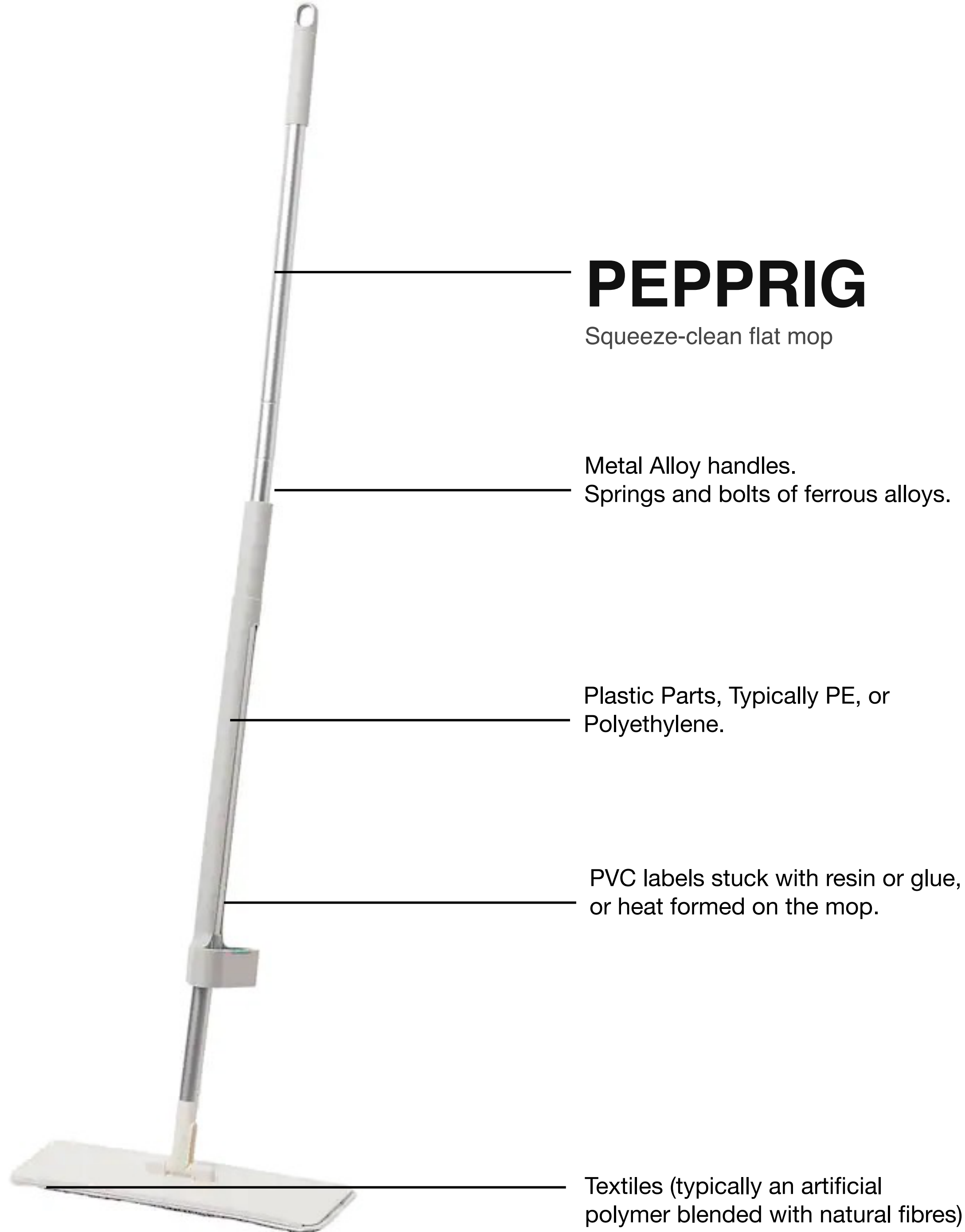
For the purposes of this effort, the focus is on municipal solid waste. While the bounds of waste are difficult to limit since a lot of waste work involves dealing with mixed compositions, we have limited the scope of the study to inorganic non-biodegradable dry waste, which includes plastics, paper, glass, metal, textile, and wood. Therefore, in the report, whenever we refer to solid or dry waste, it is these kinds of waste we are referring to. The study does not include e-waste, biodegradable waste, bio-medical waste, and construction waste directly.



*Built upon the work and access provided by Hasiru Dala

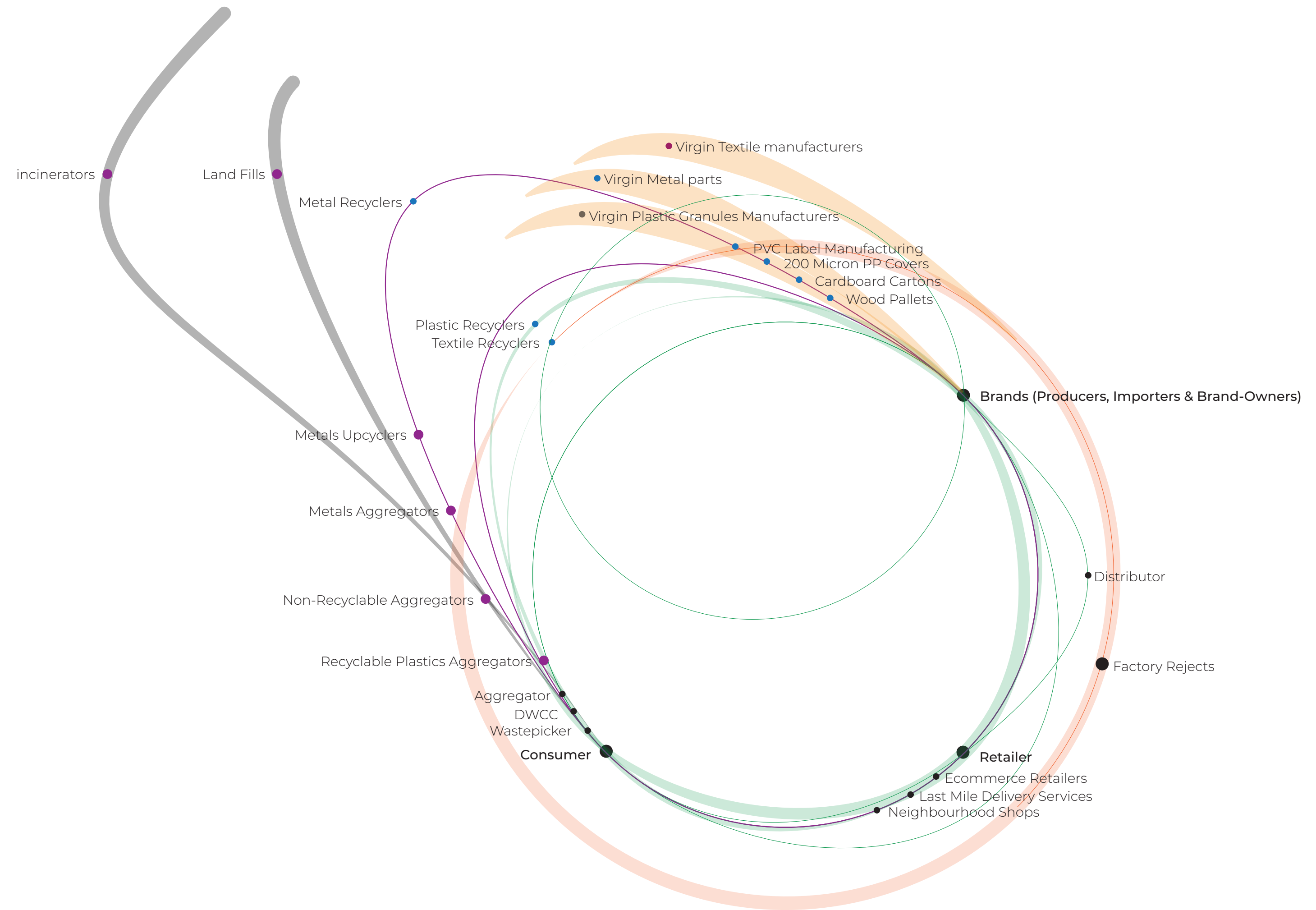


To demonstrate how waste can be seen as a systemic problem, let us take the example of a mop, which includes metal, plastic, cloth, and cardboard for packaging. Various actors influence the flow of the product across the material cycle, and there are different challenges that affect the material cycle.



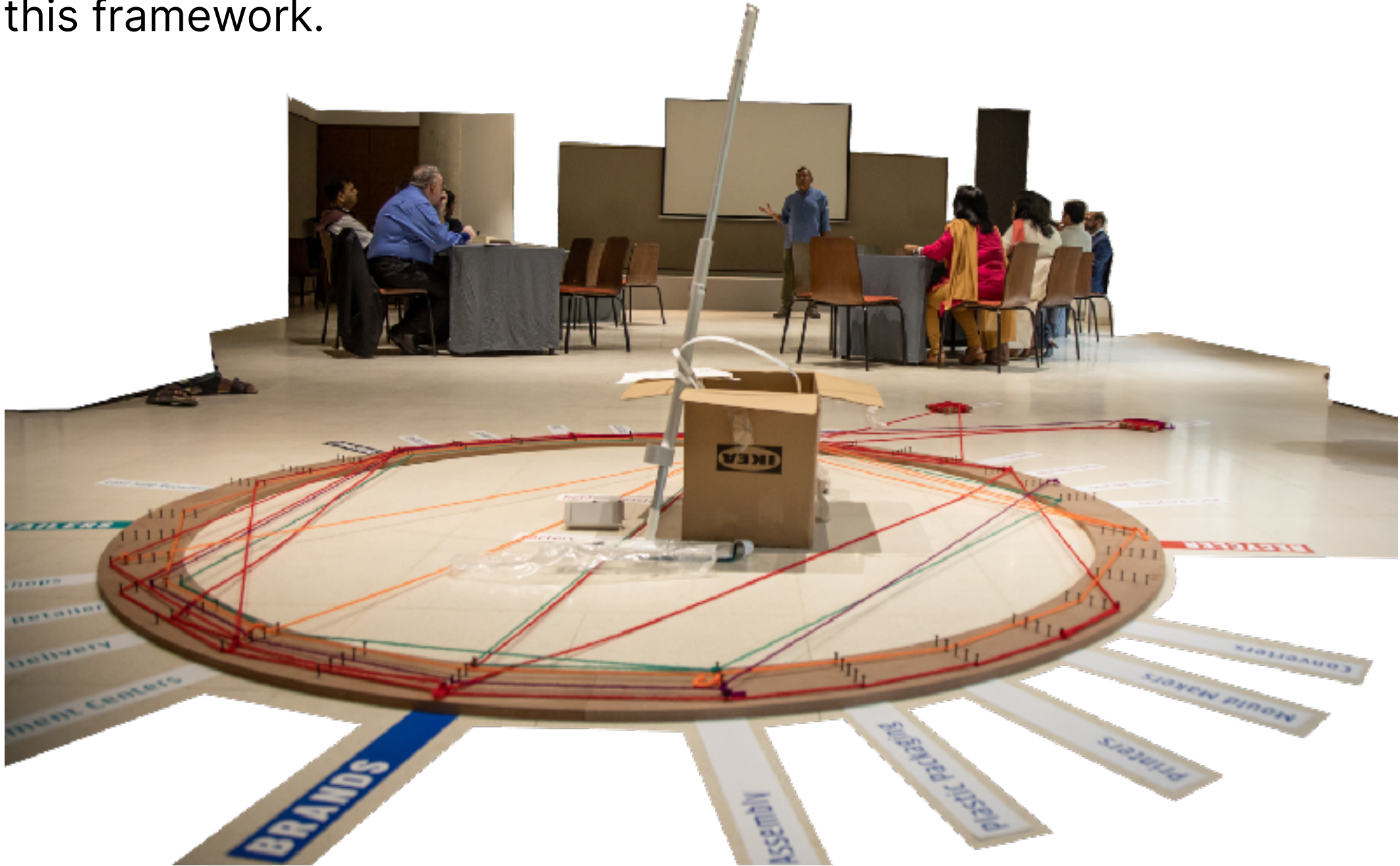
In order to widen the perspective of the conception of post-consumer waste, we reframed the focus to the entire supply chain, so 'waste' can be viewed as a systemic problem beyond its points of origin. If waste was perceived as only what results after the consumer has discarded post-use, then the rest of the materials that enabled the mop to be delivered and used remain unaddressed, and the view of the ecosystem seems to be restricted to where the consumer is the point of origin of waste.

The study attempts to expand the view of the post-consumer, inorganic, non-biodegradable waste landscape to bring to light the complex ecosystem and the various actors who influence the landscape and the support they need to continue or accelerate their work.



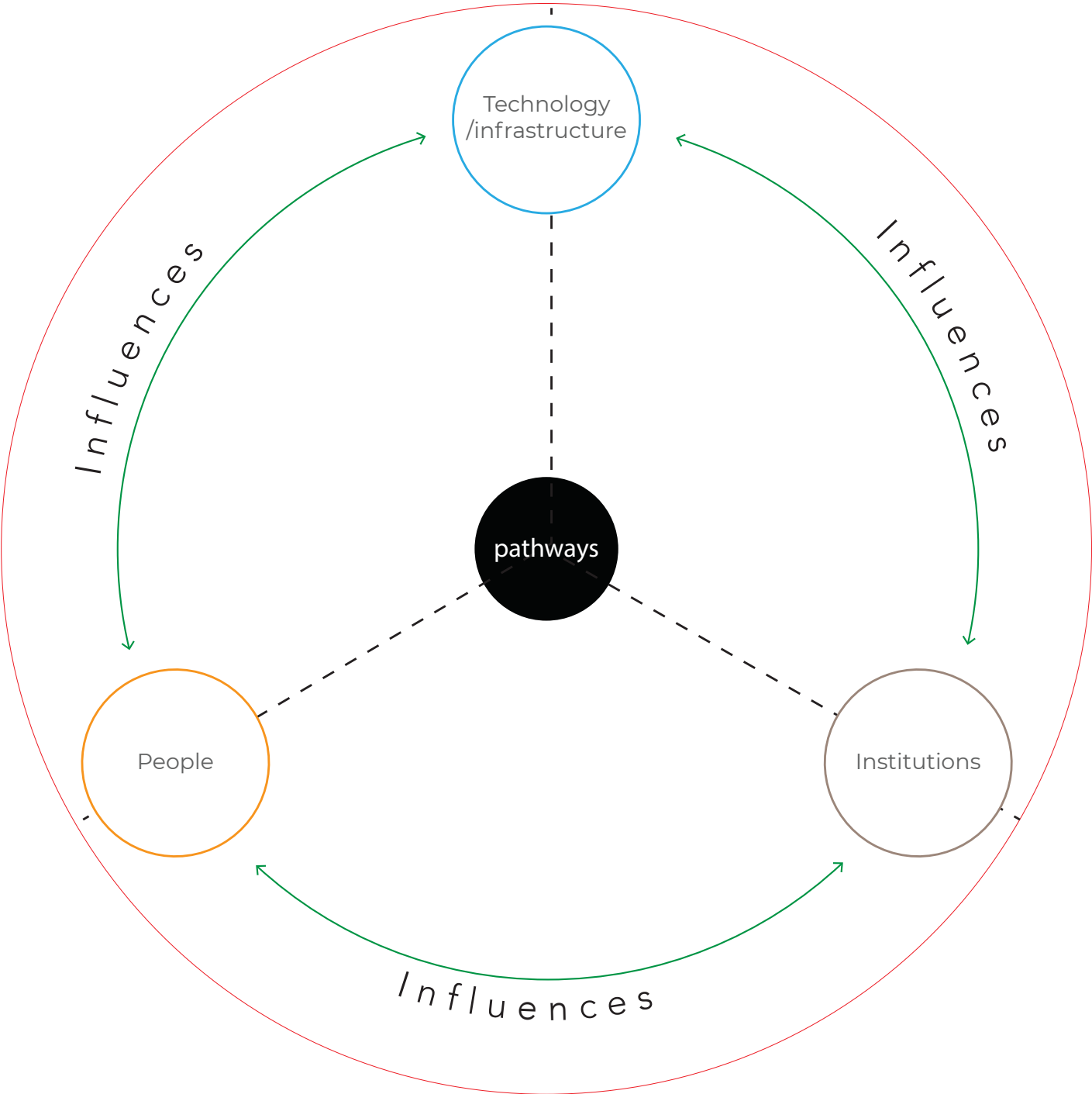
The study uses an adaption of Douglass North Framework to build a map of levers in the ecosystem.

We use an analytical framework that synthesises the complementary strengths of institutional theory and the capabilities approach to guide technological interventions using this framework.



With the support of IHS We consulted 22 Civil Society members, 25 Industry experts and policy influencers and a whole host of government documents, research papers and policy documents to come up with this report.

Industry leaders and CSO groups have also been working in the policy space with groups that do have an influence on the way policies are created and implemented. The policy landscape is complex and fractured, with most actors having visibility on actors and levers limited to those that directly affect them.



North, D. C. (1990). Institutions, institutional change, and economic performance. Cambridge University Press.

Current Challenges in the ecosystem



Civil Society

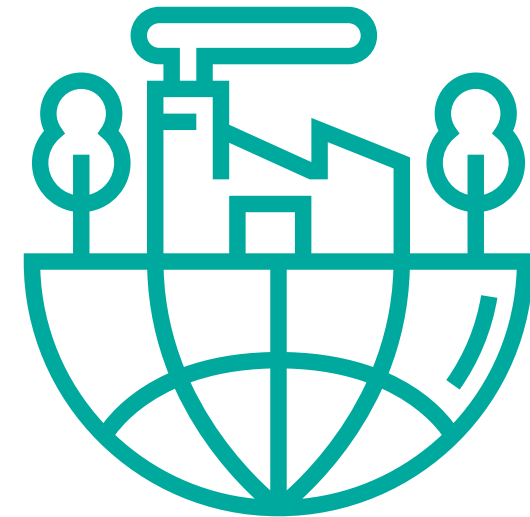
Want waste to be framed as much a social problem as a material one.

Failure of the outsourcing model
Lack of transparency

Lack of implementation of policy

Lack of accessible technology for inclusion and transparency.

High entry barrier to participate in formal recovery systems due to large volume demands.



Recyclers

Push for framing waste as a resource, for recyclables and/or valueless excess.

Technology for recycling current material composition and contamination levels are expensive, or inefficient. (Would rather work with post production waste)

Look at informality as unfair competitive advantage. And inclusion as an expense.

EPR policies are difficult to implement and follow.



Brands

Like recyclers, push for framing waste as a resource, in order to reduce the burden of recovery

Harder for brands to participate in recovery until FSSAI and BIS establish usable frameworks for materials.

Material choices aren't always guided by recovery considerations.

Conceptions adapted from Justin Chun-Him Lau School of Culture, History and Language, College of Asia & the Pacific, The Australian National University, Canberra, ACT, Australia



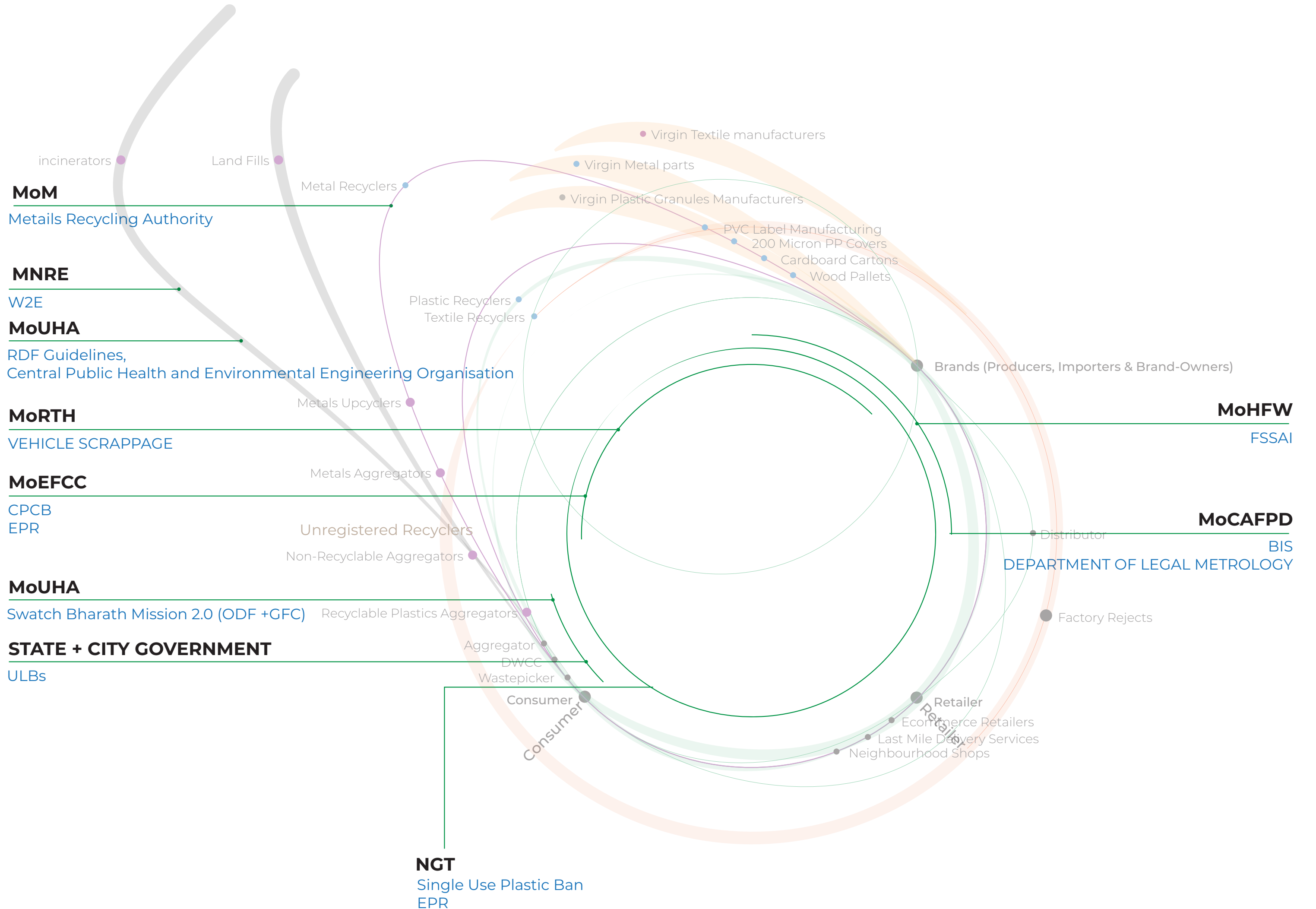
Policy Makers

With waste being framed as a sanitation and health problem in some policies and as a material recovery issue for the industry in others makes it near impossible for one mechanism for accountability to consider all actors and their roles.

Depending on which state and which ministry/department the framing of waste changes from resource to discard.

Policy shifts in the last decade have been to include more materials, but a larger discourse is still focussed on specific materials

Depending on the framing, civic engagement programs, landfilling, and other end-of-life considerations are focused on.

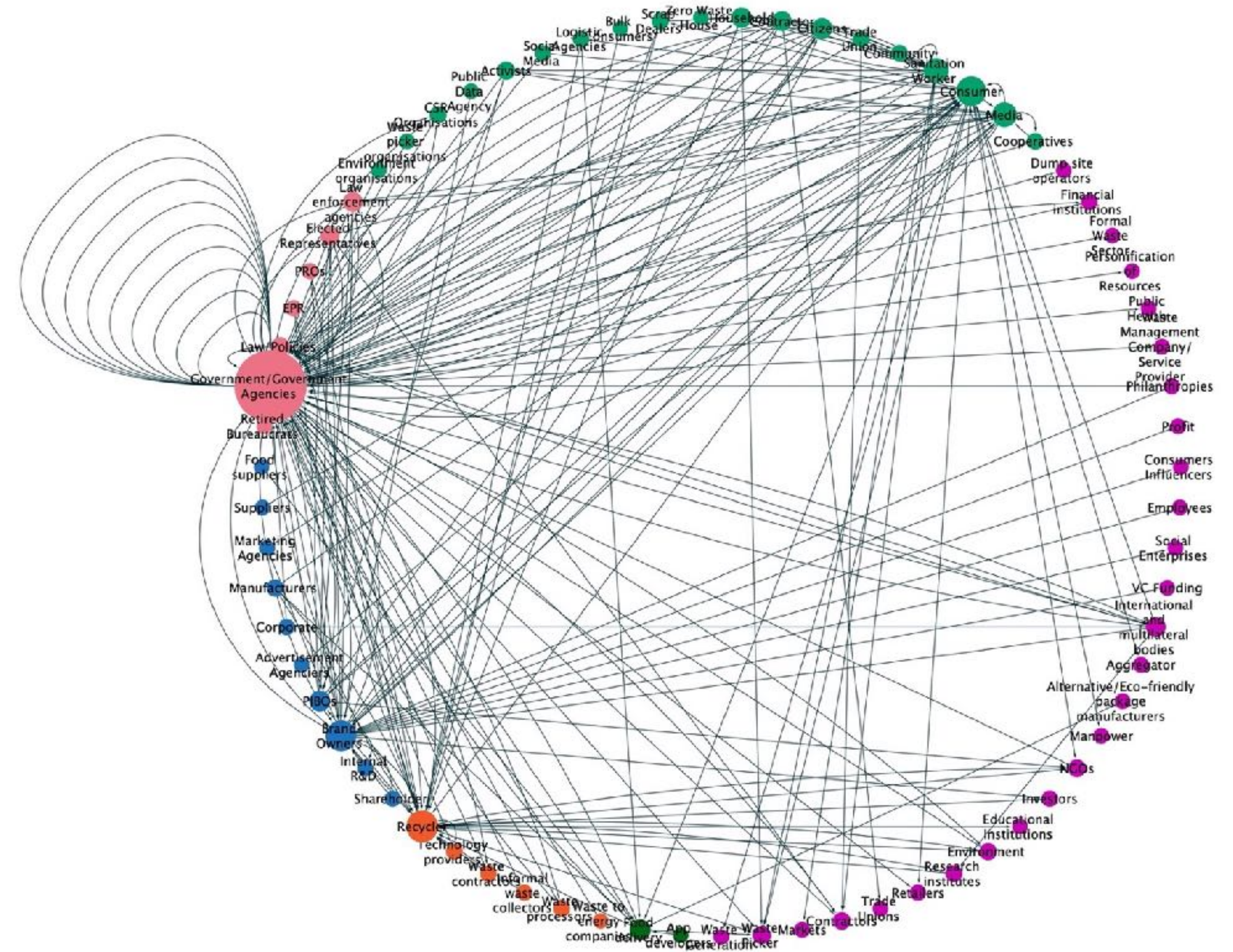


Stakeholder network analysis

Government actors and policies, and Brands have a far larger influence on the ecosystem than consumers or recyclers

The Recycler and Producer are least connected in the network which becomes the bottle neck for most circularity considerations

Collection of waste is done by multiple actors, from waste pickers to contractors and concessioners, who are incentivised in multiple ways. Since the actors post the consumer have very little influence on how material choices or materials flows are designed, the consumers being central to the generation of waste, have a lot of influence on the quality of materials sent for processing. Without source segregation, all actors subsequent have their systems stressed with contaminated materials.



Landscape of Philanthropies

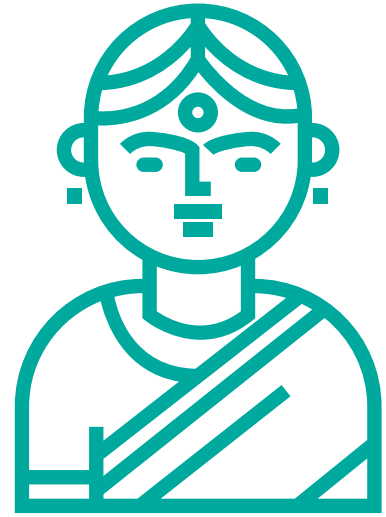
According to a 2022 report by Dasra[1],[Y11] Since 2006, the private sector has invested about \$620 million, mostly towards Swachh Bharat schemes and behavioural change communication.

Global investments in waste, totalling \$19.3 billion through the first half of 2022, while the global investments in sustainable financing has crossed the \$4 Trillion mark.

Most philanthropic investments in India, in the waste space, is diverted to the following areas.

Area	Awareness	Inclusion	Capacity Building/ implementation
Programs	Citizen engagement programs Volunteer engagements Clean-up drives	Social inclusion programs Education Health	Employment Collection Systems Infrastructure
Philanthropies	Tetra Pak Philanthropy GIZ GmbH India CSR Coca-Cola Foundation Anandana - Coca Cola Foundation Wipro Cares Western Digital Philanthropy Credit Suisse APAC Foundation Lal Family Foundation Gates Foundation	Wipro Cares UNICEF India Wipro Cares BNP Paribas Foundation Apollo Tyre Foundation Harish and Bina Shah Foundation	APPI Rainmatter MakeMyTrip Foundation UNDP UNEP Mondelez India

Potential avenues for interventions



Social Space

Knowledge commons for advocacy

Connection between climate change and recycling needs to be strengthened.

Along with just transition,

Inclusion of the informal sector

Representation of the Informal sector in policy

Support for evangelisation

Source segregation
Reduce, reuse, recycle needs to be reinforced.



Institutional Space

Funding and financing

Plastic Credits and other means of financing recovery of materials.

A more inclusive EPR and accountability mechanism, going beyond 'polluters pay'.

To strengthen collection systems for increased recyclable material availability

Material reuse and handling standards to be set for use of recycled materials in products and packaging



Technology Space

Technology

Inclusive technology for reporting

Technology for post consumer waste handling

Materials and Process Innovation

Innovation in products and materials that consider the value chain

Policy frameworks to handle shorter innovation cycles.

Annexures

References:

Framework and Methodology

[Theory of Institutions](#), (Douglass North)

[Dynamic Material Flow Analysis of PET, PE, and PP Flows in Europe](#) (Eriksen, Marie Kampmann; Pivnenko, Kostyantyn; Faraca, Giorgia; Boldrin, Alessio; Astrup, ThomasFruergaar)

[Recent trends in solid waste management status, challenges, and potential for the future Indian cities – A review](#) (Akhilesh Kumar, Avlokita Agrawal)

[Towards a care perspective on waste: A new direction in discard studies](#) (Justin Chun-Him Lau)

[Circular Indicators: an approach to measuring circularity](#) (Ellen McArthur Foundation, ANSYS Granta)

[Urban Planning and Informal Livelihoods in India](#) (WEIGO Working Paper),

Niti Ayog:

[Public Private Partnership in Integrated Solid Waste Management and Integrated Liquid Waste Management](#)

MoUHA (Swachh Bharat Mission)

[National Capacity Building Framework for Garbage-Free Cities](#) (February 2022)

[Swachh Bharat Mission - Urban](#) (October 2017)

[Toolkit for Swachh Survekshan 2023](#) (August 2022)

[Guidelines for use of RDF in Various industries.](#)

CPCB: (MoEFCC)

[The National Action Plan for Municipal Solid Waste Management](#)

[Solid Waste Management Rules 2016](#)

[Guidelines on Extended Producer Responsibility for Plastic Packaging](#)

[Central Pollution Control Website for Plastic waste rules](#)

Vehicle Scrappage Policy:

[Voluntary Vehicle Scrappage Policy](#)

Ministry of Mines

[NFM Scrap Recycling Framework3.pdf \(mines.gov.in\)](#)

Annexures

Methodology.

In game terminology, a field of view refers to what is visible to the player. Fields of View thus refers to the common ground, where different people with different perspectives can come together and have a dialogue. At FoV, in order to design tools, we have developed an in-house interdisciplinary methodology that involves participation of different stakeholders which we developed into the workshop. The disciplines we have drawn from to design the workshop include design theory, ethnographic and studies of collaborative work settings, and theories of cognition.

Drawing upon our in-house interdisciplinary methodology, the workshop thus involves a guided process involving two phases — the Problem Articulation phase and the Design phase. The first phase of the workshop, the problem formulation phase, involves participants working through different activities that lets them come up with a commonly agreed upon problem statement. The problem formulation phase is followed by the design phase, where the participants work together to imagine futures and figure out how to design for these transformations.

Phases of each workshop

Problem Articulation Phase:

Activity 1: List of problems

Type: Group activity

Outcome: Minimum 'acceptable' set of problems common across groups

Activity 2: Actors and institutions

Type: Group activity

Outcome: Defining individual/collective actors and institutions for the previously selected problem set and mapping the relationship between them.

Activity 3: Refining problem statement

Type: Group activity

Outcome: Understanding of stakeholders constraints and resources, and refined problem statement.

Design Phase:

Activity 1: Newspaper of the future

Type: Group activity

Outcome: A vision of the future where the world has evolved due to their work.

Activity 2: How-to transitions

Type: Group Activity

Outcome: A roadmap for the future

List of participating organisations:

1. Saahas
2. Chintan
3. “DBRC (Dalit Bahujan Resource Centre) /
4. AIW (Alliance of Indian Waste pickers)”
5. Swachhata Pukare
6. Better Bhalaswa
7. Sarthak
8. Waste Matters
9. Indian Green Services
10. Rise Foundation
11. Planatearth
12. NEEDS
13. “DBRC (Dalit Bahujan Resource Centre) /
14. AIW (Alliance of Indian Waste pickers)”
15. Hasiru Dala
16. Alliance of Indian Waste Pickers
17. SWMRT
18. Direct Initiative for Social and Health Action
19. Indian Green Services
20. Hand in Hand
21. Sensing Local
22. Waste Warriors

23. GPS Renewables Pvt Ltd
24. Riteways Enviro Pvt Ltd
25. Kangaroo Hydraulic Pvt. Ltd.
26. Eco Pro Environmental Services
27. Cde Asia Ltd.
28. Greentech Environ Management Pvt Ltd
29. Carbon Masters
30. Druid Systems
31. Recity
32. Recykal Foundation
33. Msgp Infra Tech Pvt Ltd
34. Hasiru Dala Innovations
35. Clean Cunoor
36. SWaCH
37. Ndmc (Dc, Karolbaug)

Acknowledgements

This report is a culmination of a series of workshops, interviews and discussions conducted to understand the various perspectives in solid waste and how philanthropic interventions could be more effectively used. The study was conducted between April of 2022 to December of 2022. The study attempts to expand the view of the solid waste landscape to bring to light the complex ecosystem and the various actors who influence the landscape and the support they need to continue or accelerate their work.

We would like to take this opportunity to thank all the people who have been extremely helpful to us during the process of research and writing of this report. Everyone at IIHS who ensured that the workshops happened without a glitch. We would also like to thank Sahana Jose from Rohini Nilekani Philanthropies to have supported us through this study.

Our entire team is extremely grateful to the 47 members from civil society organisations, Businesses, policy experts and government officials whose knowledge, understanding and generosity has this report has been made possible. The study documents the challenges and gaps, and therefore opportunities within the sector from a systems level view.

On behalf of our team,

Fields of View.

Thank you.

www.fieldsofview.in

