

This is not an ADB material. The views expressed in this document are the views of the author/s and/or their organizations and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy and/or completeness of the material's contents, and accepts no responsibility for any direct or indirect consequence of their use or reliance, whether wholly or partially. Please feel free to contact the author's directly should you have queries.

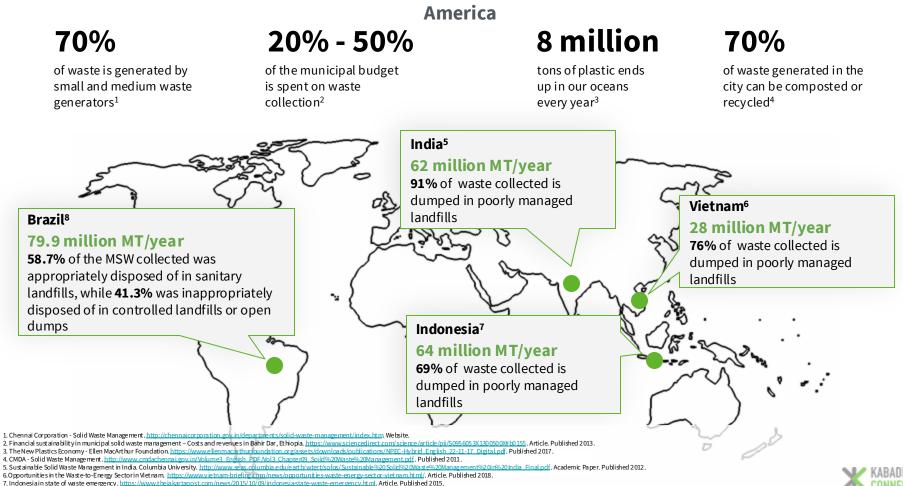


Collaborative Approaches to Waste Management: Bridging the Informal and Formal Sectors

Case Studies from India, Indonesia, Hong Kong and Sri Lanka

Presentation by **Siddharth Hande**

Presented at **ADB Circular Economy Webinar Series (#38)** *May 2025* There is a serious problem with urban waste collection systems across South East Asia, Africa & Latin

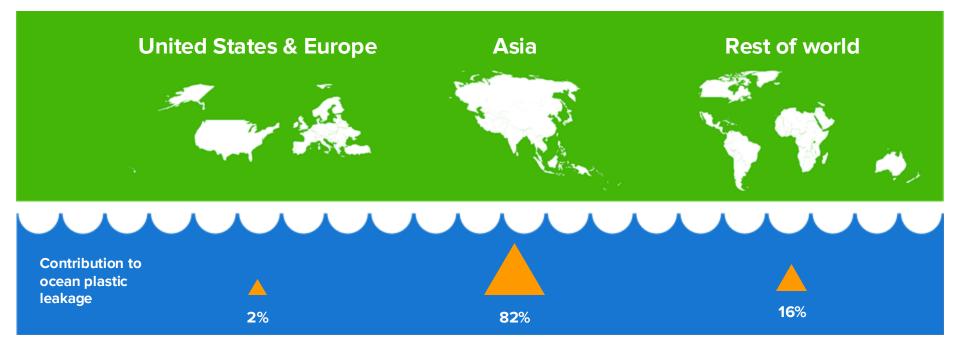


^{8.} Municipal solid waste in Brazil: A review. https://journals.sage.pub.com/doi/pdf/10.1177/0734242X17735375. Journal. Published 2017.

8 million tons of plastic ends up in our oceans every year 1



Ocean Conservancy contends that China, Indonesia, the Philippines, Thailand and Vietnam are responsible for as much as 60 percent of the plastic waste that enters the world's seas ²



1. The new plastics economy report. <u>https://www.ellenmacarthurfoundation.org/assets/downloads/publications/NPEGHybrid_English_22-11-17_Digital.pdf</u> 2.5 countries dump more plastic into the oceans than the rest of the world combined. <u>https://www.pri.org/stories/2016-01-13/5-countries-dump-more-plastic-oceans-rest-world-combined</u>

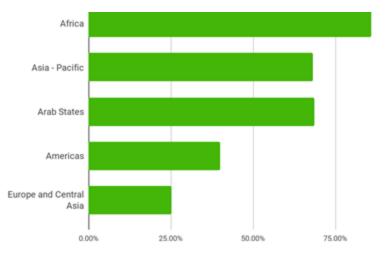
Understanding informal work | two billion people – more than 61 per cent of the world's employed population – work in the informal economy.

There is an urgent need to tackle informality. For hundreds of millions of workers, informality means a lack of social protection, rights at work and decent working conditions, and for enterprises it means low productivity and lack of access to finance. Data on those issues are crucial for designing appropriate and integrated policies that are tailored to the diversity of situations and needs.

93 per cent of the world's informal employment is in emerging and developing countries



Major cities in SE Asia, Africa & Latin America with informal sector



Informal employment across the globe



Kabadiwalla Connect is a social enterprise working to expedite the holistic integration of the informal waste sector — to support recycling and circular economy targets of cities in the Global South



Significant reduction in waste sent to the landfill



Integration of the informal waste supply chain



Bring marginalised informal stakeholders out of poverty



Help municipalities reduce the cost of waste collection





Bring traceability & certification into the recycling supply chain

Support waste diversion and recycling targets of the private

sector



The early days



81494 (917) (2147)

Let's section on pile - The Hada

SOCIETY

or cannot be a set

Let's reclaim our pride

Anusha Pertheserathy icrossis 6, 200 New 21 unation series 6, 200 New 21



It's fitting that I meet members of ROB (Reclaim Our Beaches) at the caressing shores of Besant Nagar beach. A motley group of seven sitting in a circle introduce me to a movement that began three years ago. "We dou't do beach clean-ups anymore," says Siddharth Hande, one of its founders, much to my surprise. So what do they do now? "Clean-ups aren't solutions. You pick up the waste here and dump it in Palliakarnai or somewhere else. We're looking at bearning about waste and how to manage it."





The Adyar River Estuary Waste Audit Report

Prepared by: Reclaim Our Beaches 19 April 2012 First report of the ROB Exposing Waste Campaign

Reclaim Our Beaches HT/6/9, Seevakan Street, Kalakshetra Colony, Beaant Nagar, Channal 600090



Informal waste sector in India | what we knew in 2016

1.5 Million

Waste-pickers across India¹

20%

Of recyclable materials recovered in cities²

USD 328

Average savings created for municipality per ton (INR $24,500)^2$

USD 4

Average earnings of a wastepicker per day (INR 300)³



1. https://archive.nytimes.com/www.nytimes.com/cwire/2011/05/16/16climatewire-foundations-try-to-legitimize-indias-invisib-79578.html?scp=1&sq=CHF%2520International&st=cse

2. https://rovalsocietypublishing.org/doi/10.1098/rsos.160764#:":text=Despite%20significant%20development%20in%20social.than%20properlv%20landfilled%20%5B2%5D.

3. https://indianexpress.com/article/cities/del hi/for-waste-pickers-in-noida-constant-fear-of-contracting-covid-19-on-the-iob-6531666/



Important studies on the informal waste sector - focused on India

Role of informal sector recycling in waste management in developing countries

Authors: David C.Wilson; Costas Velis; Chris Cheeseman Published on: December 2006 [Link]

- Many thousands of people in developing country cities depend on recycling materials from waste for their livelihoods.
- Western experience shows that it is very expensive to establish new formal recovery systems once existing informal ones have been allowed to decline or disappear.
- It has become increasingly evident that incorporating existing informal recycling systems into the operations of formal MSWM can bring significant benefits.

Recovery of consumer waste in India – A mass flow analysis for paper, plastic and glass and the contribution of households and the informal sector

Authors: Biplob Nandy, Gaurav Sharma, Saryu Garg, Shweta Kumari, Tess George, Yengkhom Sunanda, Bärbel Sinha Published on: 19 May 2015 [Link]

- Despite the fact that the disposal of biodegradable waste and items with no recycling value is currently poorly managed, the current system very efficiently recovers a major fraction of the recyclable matter from the waste stream.
- Overall, atleast 30–65% of the paper waste, 50–70% of the plastic waste and almost 100% of all glass bottles produced are recovered either at the household level or through garbage collectors and itinerant waste merchants.
- Promotion of an institutionalized door-to-door collection system run by a large number of selfemployed entrepreneurs will not only enhance service quality but also recover more waste for recycling and create sustainable livelihoods for the informal sector in the waste disposal value chain.

The Economics of the Informal Sector in Solid Waste Management

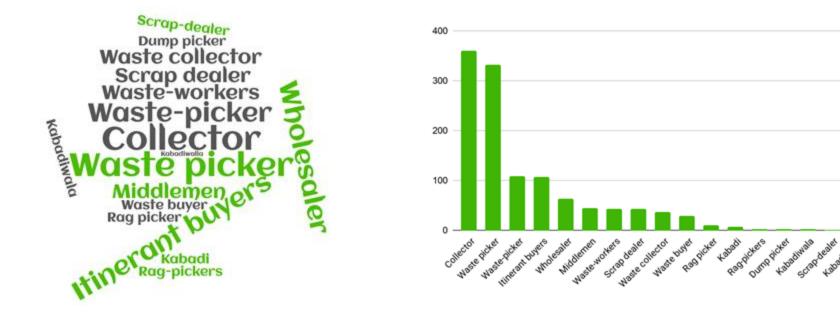
Authors: Ellen Gunsilius, Bharati Chaturvedi, Anne Scheinberg with contributions from Adrian Coad, Sofia Garcia Cortes Published on: April 2011 [Link]

- The informal solid waste management sector is more active and more effective in recovering and valorising resources than the formal one in low- and middle-income countries
- Informal recovery scores considerably better than formal recovery in terms of low or no fossil energy use. This is because many informal activities rely on human or animal muscle power, rather than on motorised transport. This gives the informal sector a considerably smaller carbon footprint.
- Regularising and integrating informal recovery into the overall solid waste system, as modelled in the addition scenarios of the cities, has its main benefits in terms of recovery rates and overall solid waste system costs



There isn't consensus on how the informal recycling supply-chain is defined

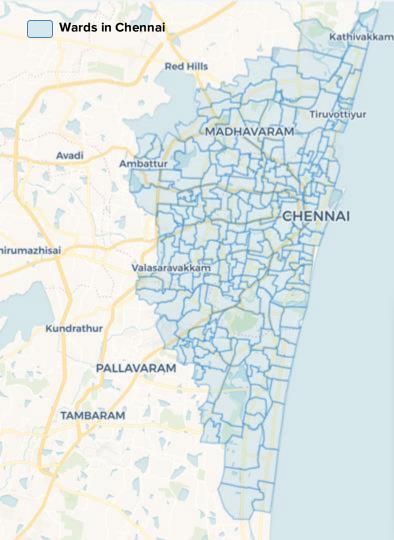
Most studies have focused mainly on waste-pickers when speaking about the informal supply chain, leaving out the informal small scrap shops and large scrap shops. Currently, there is no standardised naming conventions that refer to the different players in the informal supply chain



A word cloud showing the use of naming conventions used to describe the informal sector in India

A graph showing the use of naming conventions used to describe the informal sector in India

Visualised using the top 30 cited papers on the informal sector in India: https://docs.google.com/spreadsheets/d/16hzisOWhbt84GEvDELOpXegbwL5XES_RQ7kEHEHnt9l/edit?usp=sharing



KABADIWALLA

In 2017, Kabadiwalla Connect won a grant from Global Partnership for Sustainable Development Data (GPSDD) to map Chennai's informal waste supply chain

Key goals and activities of the project:

- Street by street surveying of small scrap shops, large informal scrap shops and processors across the 200 wards in Chennai
- A comparative analysis of demographics, business activities and material flow with in the informal supply chain
- Build an map based interactive portal allowing the exploration of the data



BETTER DATA. BETTER DECISIONS. BETTER LIVES.

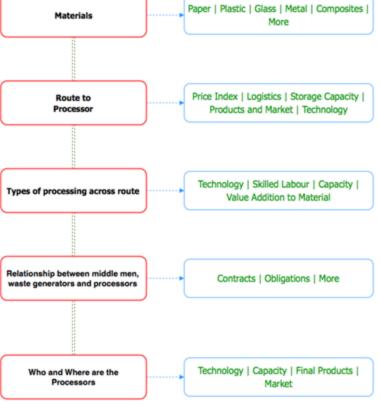
A global network using data to achieve the Sustainable Development Goals - improving lives, fighting inequality, and promoting environmental sustainability.

WORLD

Also supported by









Kabadiwalla Connects classification of the informal sector in India

Level 0 Aggregators (Waste-pickers)



Informal sector workers who may or may not have a means of transportation and incurzero or minimal input cost. These stakeholders primarily collect from roadside dustbins, landfills, and, in the case of those owning a vehicle, from households

Material Source: Street picking and dump sites

Procurement Philosophy: Material agnostic Tech Adoption: Low

Average Volume: 307 kg/month

Material currently sourced: Paper, Plastics, Glass, Metal

Level 1 Aggregators (Small Scrap shops)



Informal sector workers who have a storage space and aggregate material from L0 aggregators and residents. They do minimal or no processing of the material.

Material Source: L0 Aggregators Procurement Philosophy: Material agnostic Tech Adoption: High Processing: Manual Segregation Average shop size: 127 sq. ft Average monthly income: \$384 Smartphone: 49 % Average Volume: 9293 kg/month

Level 2 Aggregators (Informal MRFs)



Informal sector workers who buy material directly from L1 aggregators and other commercial sources in bulk. They typically specialise in a single super category of material and process it to produce secondary raw materials as well.

Material Source: L1 Aggregators Procurement Philosophy: Specialised Material Tech Adoption: High Processing: Baling,Grinding,Segregation Average shop size: 5213 sq. ft Average monthly income: \$955 Smartphone: 69 % Average Volume: 45,966 kg/month

Processor/ Recyclers

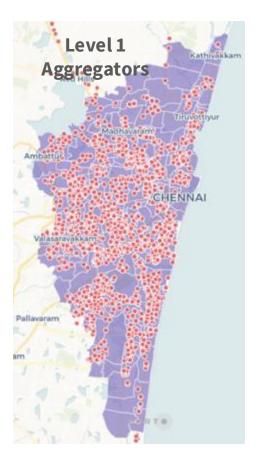


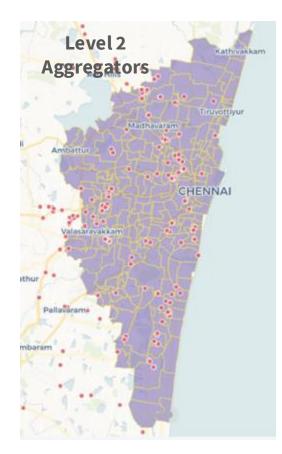
These are stakeholders who buy specific grades of post-consumer scrap material from L1s and L2s and convert them to usable secondary raw material for the manufacturing industry.

Material Source: L2 Aggregators Procurement Philosophy: Specialised Material Tech Adoption: High Processing: End of life recycling of the material

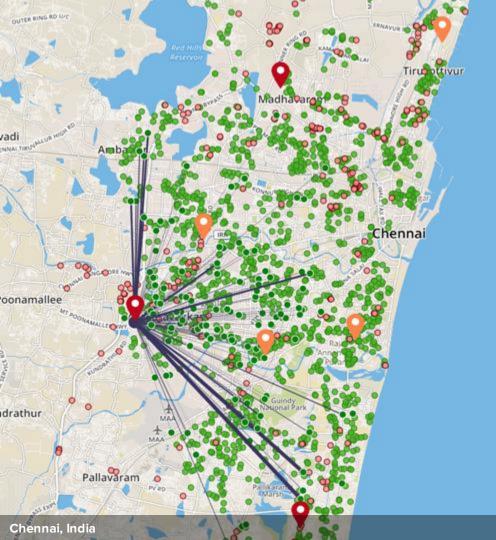


Geographical spread of informal sector stakeholders enumerated









A summary of volumes handled by Chennai's informal recycling sector

Total recyclables generated in the city: 542,000 tons/year **Total Recyclables collected by IS:** 130,000 tons/year (24%)

Material types and volumes

Material	Volume recovered (tons/year)
Paper	42000
Plastic	20000
Glass	30000
Metal	38000
Total	130000

Plastic types handled

- **PP & PE** (Called Bommai by the informal sector and includes detergent bottles, lubricants & toiletries containers, milk packets, and LD Covers etc)
- **PET** (Called as PET by the informal sector and includes water & soft drink bottles and 20L water cans)
- **ABS/HIPS** (Called Odappu by the informal sector and includes plastic parts covering appliances such as TV, AC, Washing Machine, Fridge etc.)
- **PVC** (Called PVC/hard piece by informal sector and includes PVC pipes, PVC joints, electric cables insulation layer, water hose etc.)
- PC (Called as CD/PC sheet by informal sector and includes roofs made of polycarbonate, CD, DVD, Blu ray discs)

Large recyclers drive incredible collection rates by the informal sector

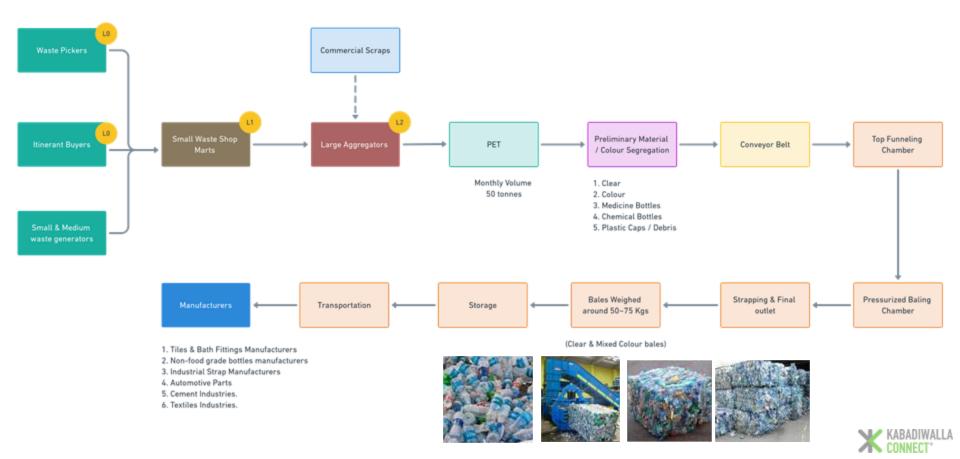


5	Wards across Cooum River				
5	Plastic Type	Generation Volume/month	IS collection volume/month		
	PP/PE	1986.0 MT	271.1 MT		
1	Low Value Plastics	429.9 MT	48.9 MT		
	PET	110.2 MT	98.0 MT		
	PVC	73.9 MT	108.8 MT		
	PS	68.2 MT	103.1 MT		
	Other	18.5 MT	5.0 MT		
	Total	2686.7 MT	634.9 MT		

Wards across Adyar River			
Plastic Type	Generation Volume/month	IS collection volume/month	
PP/PE	2310.6 MT	327.3 MT	
Low Value Plastics	500.1 MT	43.5 MT	
PET	128.2 MT	188.9 MT	
PVC	86.0 MT	115.3 MT	
PS	79.4 MT	87.7 MT	
Other	21.6 MT	1.8 MT	
Total	3125.8 MT	764.5 MT	

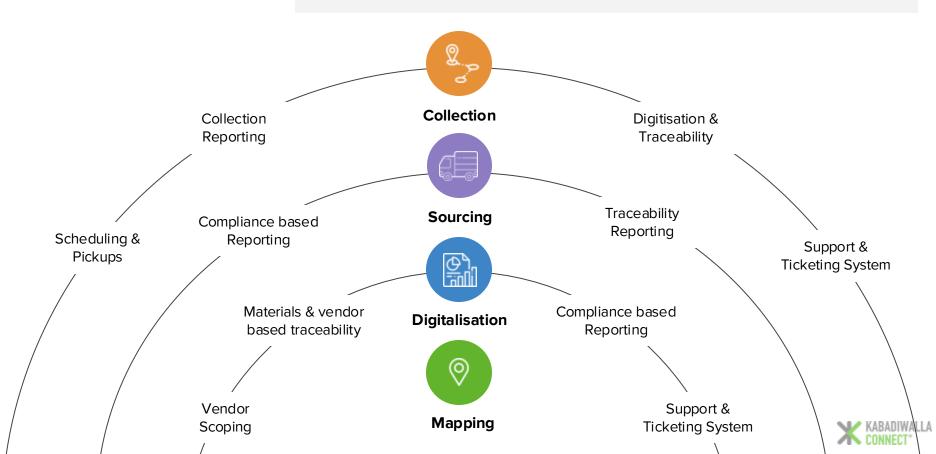


Example | Material Flow of PET in Chennai's informal supply chain



KC | Product / Services

At maturity, KC aims to position itself as a technology provider for informal sector integration in SE Asia — working with municipalities, processors, waste collection companies and Producer Responsibility Organisations (PROs)





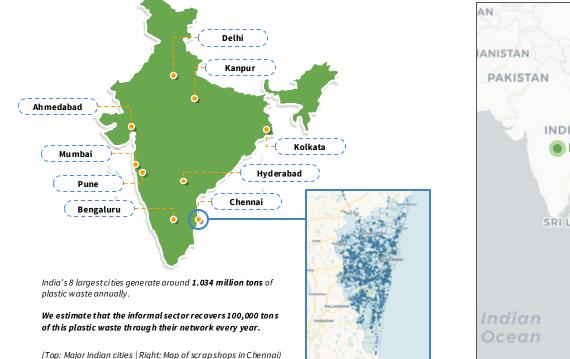
KC is tailored for the Global South

Source

building/data-innovation-fund/management-of-post-consumer-recvclable-waste



The informal sector dominates the collection of post-consumer recyclables in most cities and towns in the Global South, and KC can help catalyze inclusive integration in these regions.





Proposed integration pathway for the informal waste sector

Enumeration

One of the key steps in the integration of the informal sector is to collect data on their operations and infrastructure. This will help understand the gaps and challenges in integration before preparing an integration plan

Social Protection

Stakeholders in the informal supply chain lack any form of social protection to ensure stability in their work. For successful integration it is important that they are provided with health insurance and stable income

Digitalised Procurement (with investments into site and labour compliance)

It is important to implement basic site and labour compliance in informal scrap shops to ensure safer work environments. Digitalisation provides an added layer of traceability in the material supply chain which is currently lacking

Dignified Collection

Integration of waste-pickers and small scrap shops to organise last mile collection of municipal waste directly from households.





TAMIL NADU POLLUTION CONTROL BOARD



From

Dr. Jayanthi M, I.F.S., Chairperson, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai – 600 032 To The Commissioner / Additional Chief Secretary to Government, Greater Chennai Corporation, Ripon Building, Chennal – 600 003.

Letter No.: T3/ TNPCB/SWM/F.07620/2024, Dated: 18.04.2024

Sir,

- Sub: TNPCB SWM Project of Mainstreaming Ragpickers into Circular Economy – Mapping of Ragpickers in zone 13 & 14 of GCC with Capacity Building Programme – Work awarded to the agency of M/s.Kabadiwalla Connect Private Ltd.- Support required for data collection by the agency in GCC Zones 13 & 14 – Reg.
- Ref: 1. G.O.(Ms) No.181,E,CC & F Department dated:19.12.2023. (Copy enclosed).
 - Agreement with M/s.Kabadiwalla Connect Pvt.Ltd. for "Mapping of Rag pickers in Zone 13 & 14 of GCC with Capacity Building Programme".
 - 3. Email dated:25.03.2024 from M/s.Kabadiwalla Connect Pvt. Ltd.

.....

Tamil Nadu Pollution Control Board (TNPCB) is implementing the project of "Mainstreaming Ragpickers in to Circular Economy" which includes capacity building and training programme for Rag Pickers in the Greater Chennai Corporation (GCC) as per Announcement by the Government of Tamil Nadu for the year 2023 -2024.

Example of use of data |

Tamil Nadu Pollution Control Board | Chennai, India

Waste Collection - Informal Sector - Zone 13 and Zone 14

Waste Pickers collect only materials like Plastics, Paper and Metal. So to calculate the percentage of materials collected by Rag pickers out of total informal collection, we consider only the volume of Plastics, paper and metal collected by scrap shops in Zone 13 and 14



Zone 14 10,441 Tons / Year Nostics, Paper, Metal Volume collected by Scrap shops - Plostics, Paper, Metal 27% 1,642 Tons/Year 16% Volume of wattes collected by Collected by LO's No of Materials Collected by LO's Noterials Collected by LO's - Plostics, Paper, Metal

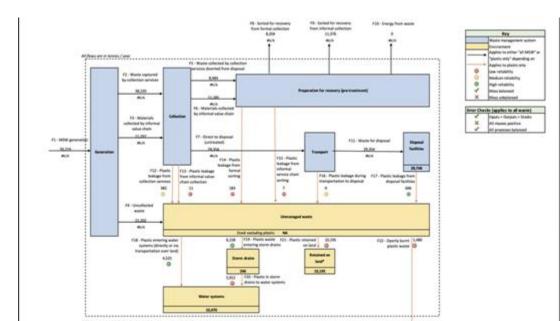






Example of use of data |

TNMoEF and GIZ | Chennai, India





DOWN THE STREAM

A baseline study report to identify hotspots of plastic waste and open drains along the Adyar and Cooum Rivers in Chennai



Home > Special Issues > Special Issue 19 > 1. Plastics: from apogee to contr... > The informal waste sector: a solu...



Example of use of data |

KC <> Veolia Proof of Concept in Semarang, Indonesia

Working with Informal Collection Centers

Veolia aims to empower waste management's front line workers, like waste pickers, and people working in the informal collection sector to have a better livelihood, access to training and better working conditions.

Veolia is currently working on two main programs:

- Inclusive Recycling Indonesia program, with Danone Ecosystem, Danone . Agua, YPCII and Veolia.
- VSI Sustainable collection center program by Veolia. . L1















VSI





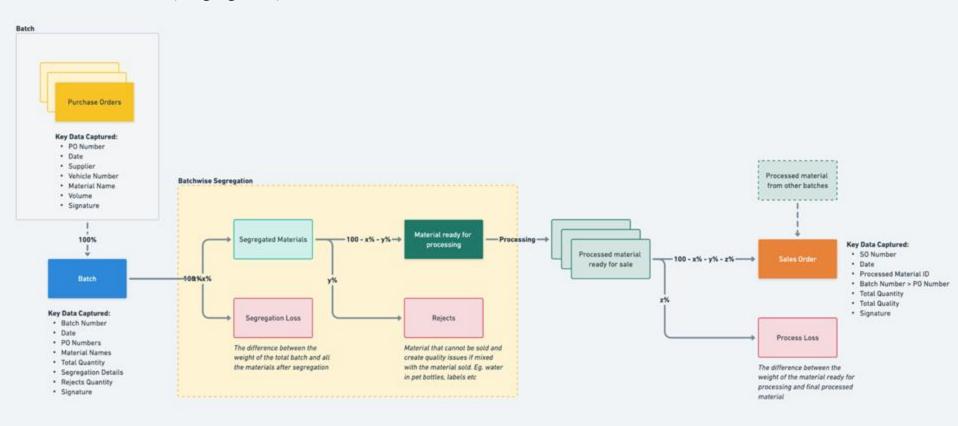
Waste pickers O PT VIETA DAVAGAL PARTNER

Aggregators

Collection centers

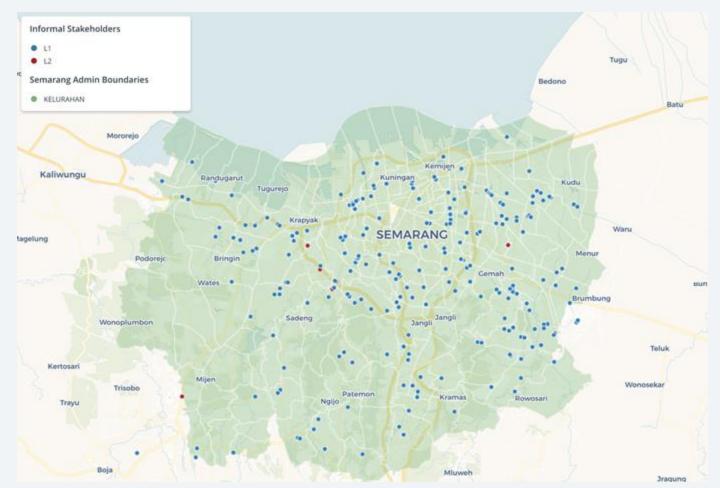
1.2

Traceability Using Mass Balance Approach (Theoretical Framework)





Traceability Example (Indonesia)



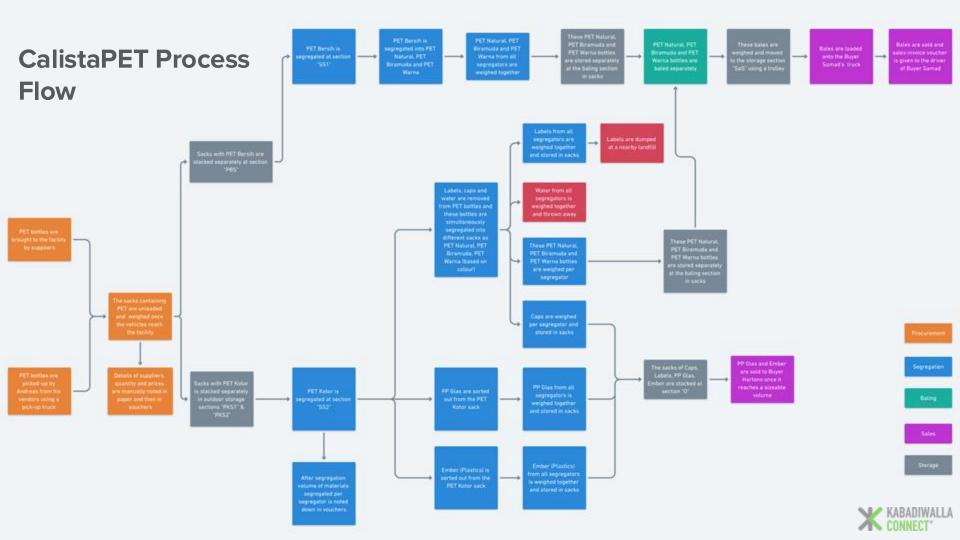


Traceability Example (Indonesia)



Owner	:	Andreas
Address	:	Jl. Jalan, Candi Pawan Timur 7/20, Kalibanteng Kulon,
		Semarang Barat 50145,
		Semarang, Indonesia
Employees	;	13
Experience	1	5
Materials Handled	:	PET
Monthly capacity	1	40 tons
Number of suppliers	:	56

Informal Name	Standard Name	Material Description	Material Type
PET Kotor	PET - A	PET bottles with labels and caps. It primarily contains transparent and blue bottles. Contains rejects.	Unsegregated PET
PET Mix	PET - M	PET bottles without labels and caps, but it has been not colour separated. Contains rejects.	Unsegregated PET
PET Mix Grade A	PET - M+	Transparent and blue PET bottles without labels and caps. Does not contain any rejects and can be directly sent for baling.	Segregated PET
PET Grade B	PET - B	Low quality PET bottles.	Unsegregated PET
PET Birumuda	PET - Blue	Pre-segregated blue PET bottles that can be directly sent for baling.	Segregated PET
PET Natural	PET - Transparent	Pre-segregated transparent PET bottles that can be directly sent for baling.	Segregated PET
PET Notriboost	PET - White	White coloured PET bottles that comes along with PET Kotor.	Unsegregated PET
PET Warna	PET - Colour	Colored PET bottles.	Unsegregated PET





Baling

SaS



Traceability Example (Indonesia)





Traceability Example (Hong Kong)



Waste Generation

• •

.....

Residential Commercial Streets

• •

Primary waste aggregation/collection

• •

Waste-pickers Cleaners Corner recycling shops Municipal recycling bins Reverse vending machine Refuse collection point Recycling truck (Formal) Recycling Truck (Informal) Green stores

Transfer station Informal material recovery facility Formal material recovery facility

Pre-treatment

Offtake

• •

Pelletizers (Food grade) Pelletizers (Non-food grade)

Tier 1 Traceability

. . . 📥

.



•••••







Material Name

Avg volume / month

Paper (Sze pei)	1 tons
Metal (Zaap Tung)	1.5 tons
Plastics Bottles (Gau)	To be verified







Material Name

Avg volume / month

Paper (Sze pei)	15 tons
Metal (Zaap Tung)	20 tons
Plastics Bottles (Gau)	To be verified







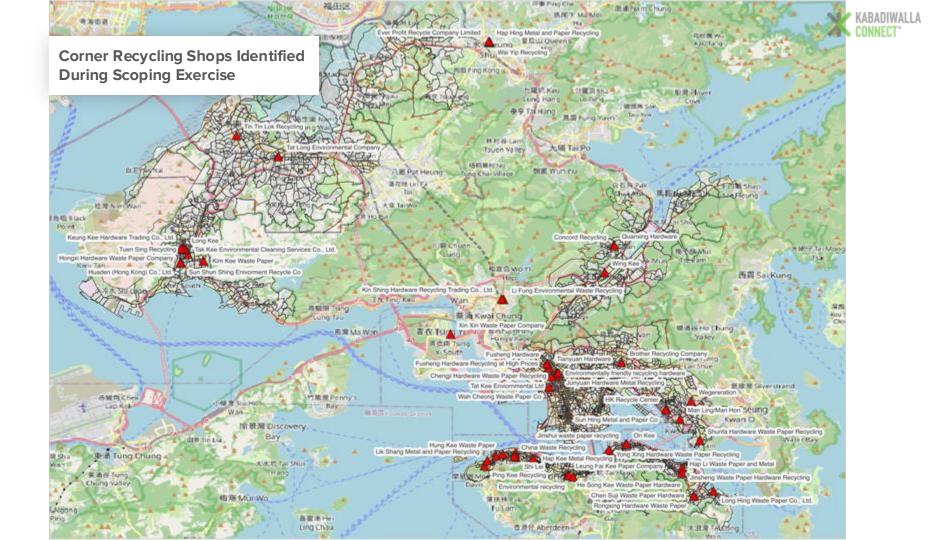
Material Name

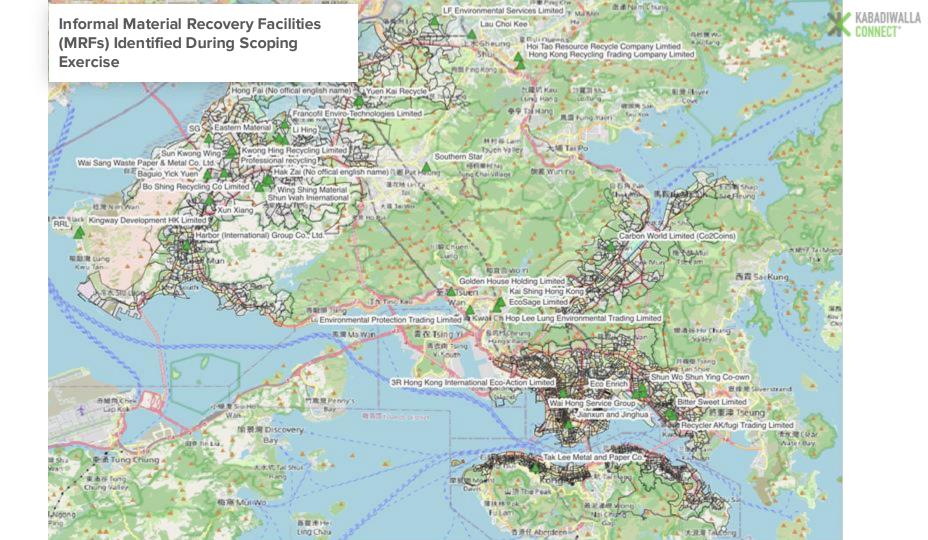
Paper (Sze pei)	
Metal (Zaap Tung)	
Plastics Bottles (Gau)	

Avg volume / month

	2000 tons
	3000 tons
То	be verified

VADADIWALI

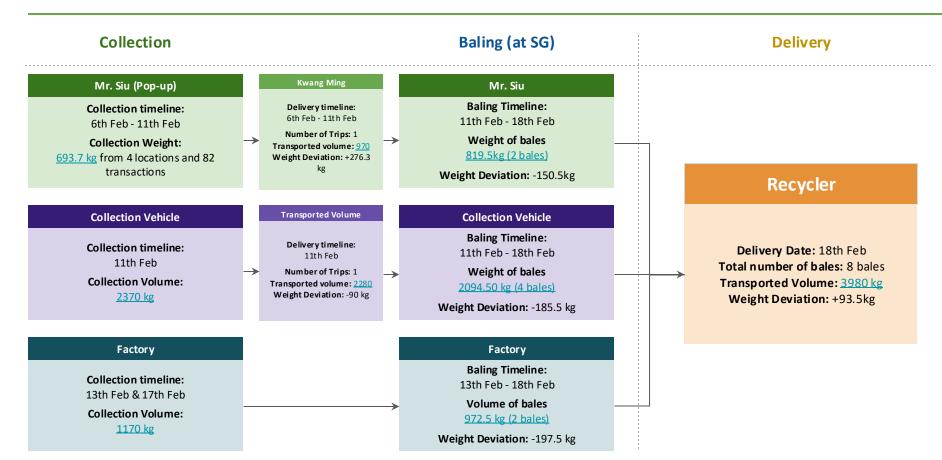




Traceability Example (Hong Kong)

KABADIWALLA Connect*

18th February, 2025



Procurement Example | India

17-February to 1-July 2024

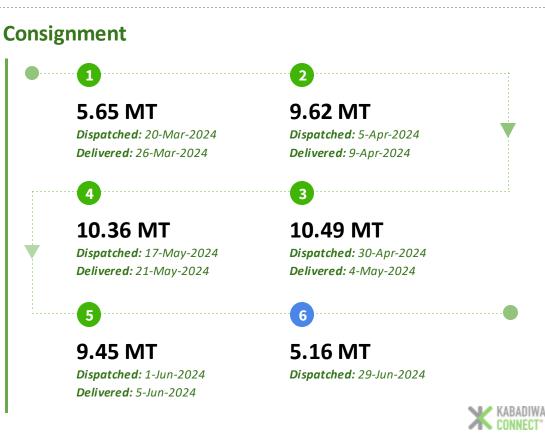
Procurement, Processing & Sales

52.93 MT Total volume of HDPE procured

50.80 MT Total volume of **HDPE Bales** processed

2.13 MT (4.0%) Total wastage volume after processing

50.73 MT Total sales volume



Informal MRF Partner - RSVS Traders, Redhills



Key Responsibilities

- Baling of 50 Tons HDPE plastics
- Provide support for client visit
- Provide space for physical quality assessment for material before baling
- Providing material for loading & unloading



MoU Between KC & RSVS Traders

#01. Uthamar GateRv Salai.

Nungambelikam,

Tamil Nodu

Chartelai - 800 054

X KABADIWALLA

MEMORANDUM OF UNDERSTANDING

Between Kabadiwalla Connect Private Limited and RSVS Staden Private Limited,

This con - binding Memorandum of Lindenstanding is made and entered into an (Date) <u>JUSAU2</u> between:

Rabadiwalla Connext Private Limited,

No.65. Uthamar Bandhi Salai,

Nungambakkem,

Channal - 500034,

and

RSVS Traders Private Limited,

104, Nahru Nagar 1st Street,

Pullyanthops,

Oema - 600012

1. Background

Kakadiwalia Connect has entered into an agreement with theil through the Shell Connectuages pargrain to proceed 50 tors of balled post consumer HDPL bottles to Neptirecycling facility in Anmediatad, Gujarat as a plot initiative to mart. Shell histocants Delended Producer Responsibility (DPL Compliance).

8. Purpose

The purpose of this MOU is to outline the understanding between Kalaaliwalla connect and KOS Traders concerning

 Buing 50 tons of HOHE bottles in compliance with Kabadhwalla connect's specifications. KABADIWALLA CONNECT"

V. Duration:

This MoU shall commence on the date of signing and continue until the completion of the balling and transportation of the 50 tonnes of post-consumer HDPE bottles, unless terminated earlier by mutual agreement.

VI. Termination:

Either party may terminate this MOU by providing written notice to the other party if there is a material breach of the MDU by the other party, or for any other mason agreed upon in writing by both parties.

VII. Confidentiality:

Both parties agree to maintain the confidentiality of any proprietary information disclosed during the course of collaboration under this Agreement.

This Memorandum of Understanding is hereby accepted and agreed upon by the parties, By signing below, the parties acknowledge that they have read and understood this MOU.

Kabadiwalla Connect Private Limited:

Added Roberton

ROVE Traders

Date: 71 -1 - 2016

THE Processons Manager

Dete: 23-08-2034

🗤 KABADIWALLA A

#65, Uthamar Gandhi Salai,

Nungambukkam.

Tamil Nodu

Chennal + 500 034

453, Uthamar Gandhi Salai, Nungoribaldian, Channai - 600 034 Tamil Nadu

ufdgreetru güudgiti

sunyumur sümsü dimplai, aldüllü ağgal aşterindimin yüputirir dimplai, aldüllü ğimlüli

Bis Commits which also also and all and a second a se

sumpoment sülerisi, diergičas, shidila, i., netrus, s. jagozį argigi ereteo, gelasiourisais, Genterete sozis,

100000

agánelvellevév vyðju, jelv iðærgðarú, elkiðú, rú, 20. dagsjarð (ugali Garg, unflugiðari)u, Greitener - 2000

s. Seiteman B

மேல் தூரிக்காடுகள் வீரிவாக்லப்பட்ட உருக்தியான் மொறுப்பு 100 இனக்கத்தை முந்தி பொலதற்கள் ஒரு முன்முயற்ரியாக தற்றத்தின் அவருகாற்றில் உள்ள இற்பா மற்றதற்கி வாதிக்கு 10 டன் வேற்ற நீத்தவடத்தில்பார் பல படில்களை மழங்க மெல் வேசெத்தத் திட்டத்தின் நுலம் தெற்துடன் காளுமான கணெட் மூலதல் மோழுன்றது.

a Conésià

இந்த பரித்தனரில் ஒப்பத்ததின் தோக்கம் கப்படியாலா கணேக், மற்றும் ஆர்ச்சம்பரிசைப்படிலே, நாட்டுப்படான பரிதனை கோடிட்டுக் காட்டுவதாகம்.



865, Uthamar Gandhi Salai, Nungambakkam, Chennai - 500 034 Tamil Nadu

இந்த புந்துணர்வு ஒப்பத்தம் கட்சிகளாய் ஏற்றக்கொள்ளப்பட்டு ஒப்புக் கோல்லப்படுகிறது. #0.g கையெல்பமிடுவதன் துலை, இந்த பரித்துணர்வு ஒப்பந்தத்தை தாங்கள் படித்து பரித்து கோண்டதாக கட்சியினர் ஒப்புக்கொள்ளோர்கள்.

ALTILIZATION ADDREEL GENERAL COLORILE

Cap 22-02. 2-24

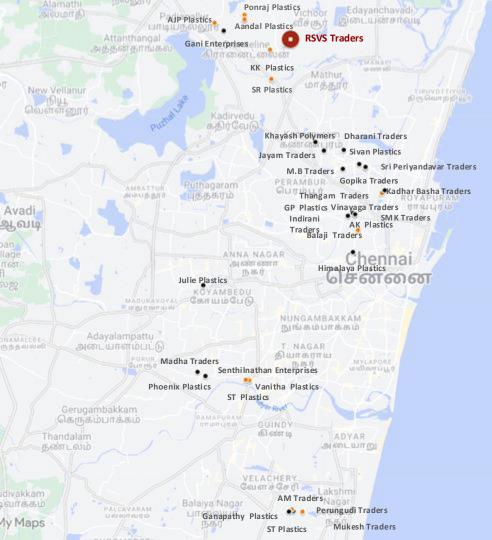


penerity Balance Parage

ALADDINGTON LOCALARY

ເຫດຊົມແມ່ນນີ



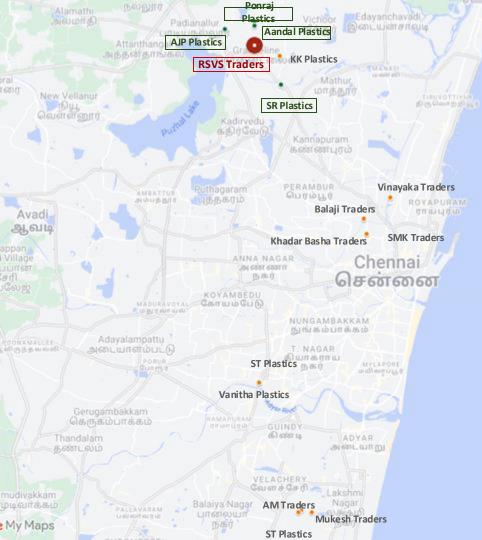




Supplier Scoping

Number of Suppliers Scoped - 35





KABADIWALLA

Potential Suppliers

Supplier Name	Material	Capacity	Price (Rs)
Kadhar Basha	PP	5 MT/Month	35
Balaji Traders	HDPE/PP	10 MT/Month	55/35
ST Plastics - Perungudi	РР	5 MT/Month	35
ST Plastics - Guind y	PP	5 MT/Month	35
Mukesh Traders	РР	4MT/Month	34
SMK Traders	PP	4 MT/Month	35
Vanitha Traders	РР	2.5 MT/Month	35
Vinayaga Plastics	РР	3 MT/Month	33
Ponraj Plastics	HDPE/PP	8 MT/Month	52/30
SR Plastics	HDPE/PP	10 MT/Month	52/35
Sri Th and ap ani	РР	5 MT/Month	35
KK Plastics	HDPE/PP	5 MT/Month	55/35
AJP Plastics	HDPE/PP	10 MT/Month	52/35
Aandal Plastics	HDPE/PP	5 MT/Month	55/35

Consignment 1 - Summary

Consignment 1 - Summary		
Volume Dispatched	5.65 MT	
No. of Bales	37	
Average Bale Weight	152 Kgs	
Batch Number	B-001& B-002	
Transport Agency Name	Santosh Movers	
Transport Cost	Rs. 55,000@ 9.7/Kg	
Vehicle Number	TN18BH4009	
Vehicle Type	20 Feet Closed Container	
Drivers Name	Ashok Kumar Yadav Subhash Chandra Yadav	
Dispatched From	RSVS Traders (L2 Partner), Chennai	
Delivered To	Ahmedabad	

Transit Overview		
Date	Running Hours	City
20/03/2024	11 PM - 9 AM	Bangalore
21/03/2024	10 PM - 9 AM	Hubli
22/03/2024	1 PM - 6 PM	Kolhapur
23/03/2024	6 AM - 5 PM	Mumbai
24/03/2024	Halt	Mumbai
25/03/2024	Halt	Mumbai
26/03/2024	5 AM - 3 PM	Ahmedabad





Consignment 2 - Summary

Consign	ment 2 - Summary	
Volume Dispatched	9.62 MT	
No. of Bales	67	Date
Average Bale Weight	143 Kgs	
BatchNumber	B-003 & B-004	05/04/202
Transport Agency Name	Santosh Movers	
Transport Cost	Rs. 87,000@ 9/Kg	06/04/202
Vehicle Number	RJ 32GC0789]
Vehicle Type	32 Feet Closed Container	07/04/202
Drivers Name	Tahir Hasam Siraj Kasam	08/04/202
Dispatched From	RSVS Traders (L2 Partner), Chennai	
Delivered To	Ahmedabad	09/04/202

Transit Overview		
Date	Running Hours	City
05/04/2024	6 PM - 4 AM	Andhra Pradesh
06/04/2024	10 AM - 4 PM	Karnataka
07/04/2024	11 PM - 8 AM	Maharashtra
08/04/2024	7 PM - 5 AM	Gujrat
09/04/2024	10 A M	Ahmedabad



Material documentation

Documents sent along with Consignment

- GST Invoice
- E-Way Bill
- Origin Slip

Documents to be uploaded in BAMS

KC Documents

- GST Invoice
- E-Way Bill
- Weighment Receipt

Transport Documents

- Drivers License
- Vehicle Registration Certificate
- Vehicle Insurance
- Lorry Receipt

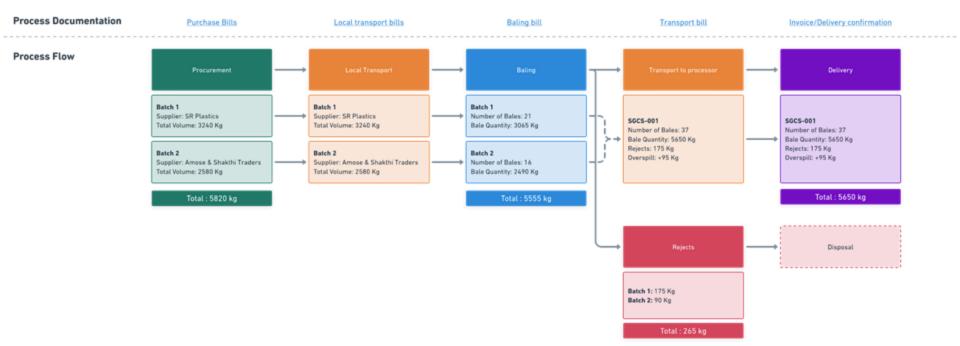
Documents for Transportation

- Valid Driving Licence
- Registration Certificate
- Fitness Certificate
- Pollution Under Control Certificate
- National Permit
- Road Tax Certificate
- Insurance Certificate
- Goods and services Tax Registration
- FASTag
- Vehicle Insurance
- Trade License
- Permit for Oversized/Overweight Vehicle

Note: All payments to suppliers and vendors were conducted electronically via bank transfers, with no cash transactions involved.



Traceability Example - Consignment 1





HSSE upgrades for informal

aggregators and workers



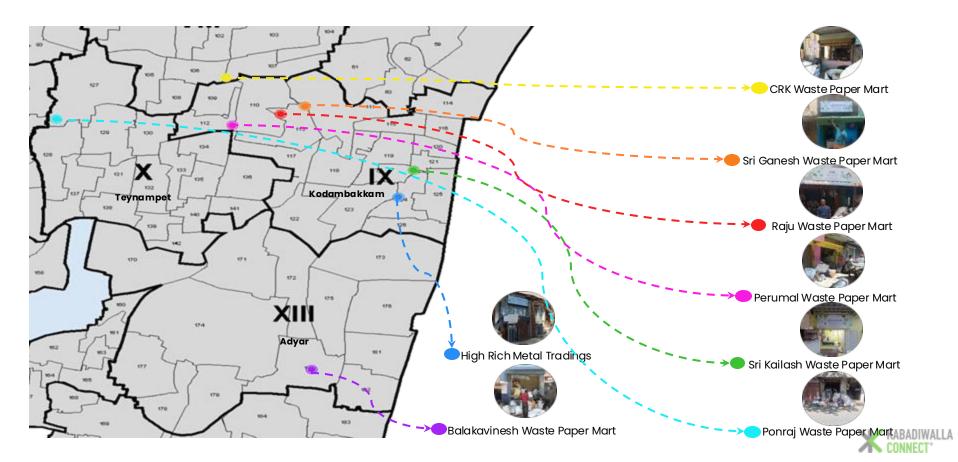
Utilising the IOGP Framework | Shell Gamechanger







HSSE Execution



Provision of Health Insurance for Waste-pickers



Health insurance provision to Chennai's waste-pickers



Enrollment Scheme Chief Minister Comprehensive Health Insurance Scheme (CMCHIS)



Documents necessary for enrollment (eligibility)

- Aadhar Card
- Smart Ration Card
- Valid Mobile Number



Current Statistics

Summary - Health Insurance Enrollment and Status Tracker		
Week Number	14/06/2024	
Number of Waste-pickers Enrolled	500	
Document Collection Completion Status	500	
Completion of Application Form Status	500	



Collection drive use case — The Invisible recyclers campaign

Shortlisting of Level 1 Aggregators

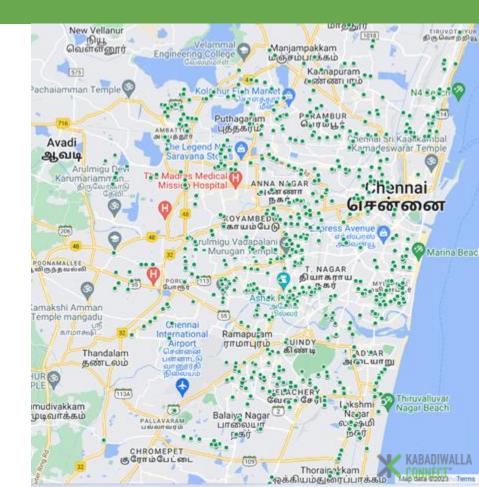


Invisible Recyclers campaign

Identification and selection of Level 1 Aggregators

691 L1's were identified suitable to participate in the campaign based on the following criteria

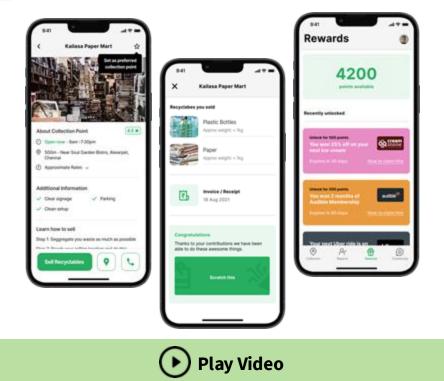
- No Child Labour
- Customer Convenience (No Blockage in the entrance/Clean and Tidy Shop/Proper roads/easily accessible)
- Customer Base (Nearby residents are customers of this shop)
- Nature of the shop owner (Friendly Person/Providing fair price for the material he receives)
- Proper Signage (Name board)



Launch of Kabadiwalla Connect Smartphone Application



Launch of smartphone application on IoS and Android — called 'Kabadiwalla Connect'







Collection drive use-case in Chennai (Invisible Recyclers campaign)



Segregation of recyclables



Storage of recyclables



Preliminary segregation at scrap shop



Upload sales invoice on app



Payment



Weighing and billing KABAD WALLA



User bringing recyclables for sale

Segregation of Materials

First Sale of the event

Bill issued to the User



Enthusiastic Users (RWA)

KC team with collected materials





Apartment Video

User Carrying recyclables

User downloading the App

Click to Play Videos

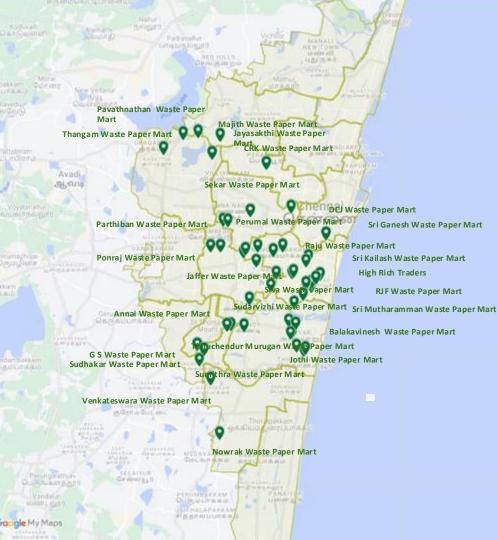




User Testimonials

Click to Play Videos





Onboarding status of L1 for IR Campaign

Total Onboarded L1s - 51

Open Dashboard



Soft Launch - Transactions summary

Summary of transactions				
Date		31/03/2025		
Total Transactions		234		
Total Transaction Approved		234		
Rejection rate	0%			
Volume Recycled	2162.14 Kgs			
	Volume b	y material		
Material	Volum	e (Kgs)	Average price per kg	
Plastics	651.50		₹8.34	
Metal	249.50		₹12.20	
Paper	180		₹12.37	
Glass	5		₹4	🐓 KABADIW
				CONNECT

Collection Drive Use-case | Batticaloa (Sri Lanka)



EFFECTIVE WASTE MANAGEMENT

MAPPING OF INFORMAL WASTE MANAGEMENT IN BATTICALOA

awarded

Plastic pollution has emerged as a major environmental issue in Batticaloa, severely impacting the region's natural beauty and the health of its community. The once untouched beaches, rivers, and public areas are now marred by plastic waste, which poses health risks to the community and disrupts the livelihood of communities.

SPM Foundation is an organisation based in Batticaloa, whose mission is to reduce plastic waste by promoting recycling, upcycling, and community-led environmental initiatives. SPM, in partnership with <u>Kabadiwalla Collect</u> as a technical lead, was awarded a grant via round 4 of the <u>Depeche Mode</u> and <u>Hublot</u> and <u>Conservation Collective</u> partnership.

This is the final round of funding offered through this partnership, established in June 2023 and has disbursed nearly \$900,000 to support local community projects around the world that are involved in cleanups, waste management systems and by encouraging local businesses and consumers to make more sustainable choices.

The project intends to conduct street-by-street surveying of small scrap shops, large informal scrap shops and processors across Grama Niladhari (GN) administrative divisions in Batticaloa, Sri Lanka to create a comparative analysis of demographics, business activities and material flow within the informal supply chain.



Collection Drive Use-case | Batticaloa (Sri Lanka)



Click to Play Videos

