



BANGKOK PLASTICS WEEK

9–12 October 2023 • Bangkok, Thailand

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Increasing Waste Recycling in the Global South by leveraging the Informal Sector

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Presentation Outline

1. Understanding Informality in the Recycling Supply Chain
2. Kabadiwalla Connects' approach to informal sector integration
3. Q&A



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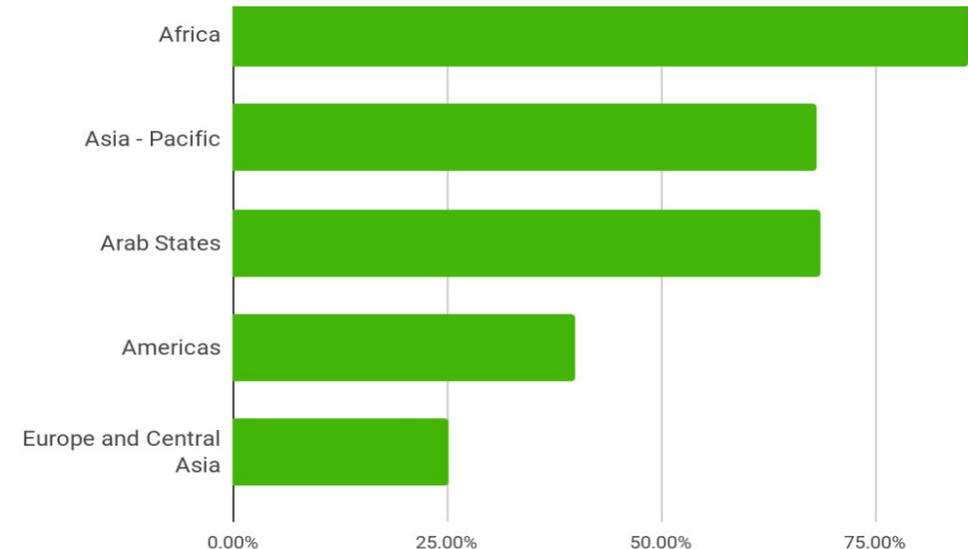
Understanding Informality | Two billion people – more than **61 per cent** of the world's employed population – work in the informal economy.

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

1. https://www.ilo.org/asia/media-centre/news/WCMS_627585/lang--en/index.htm#:~:text=Southern%20Asia%20and%20South%2DEastern,per%20cent%20in%20Southern%20Asia.



Informal waste sector in India | What we knew before mapping in Chennai, India

1.5 Million

Waste-pickers across the country¹

20%

Of recyclable materials recovered²

USD 328

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

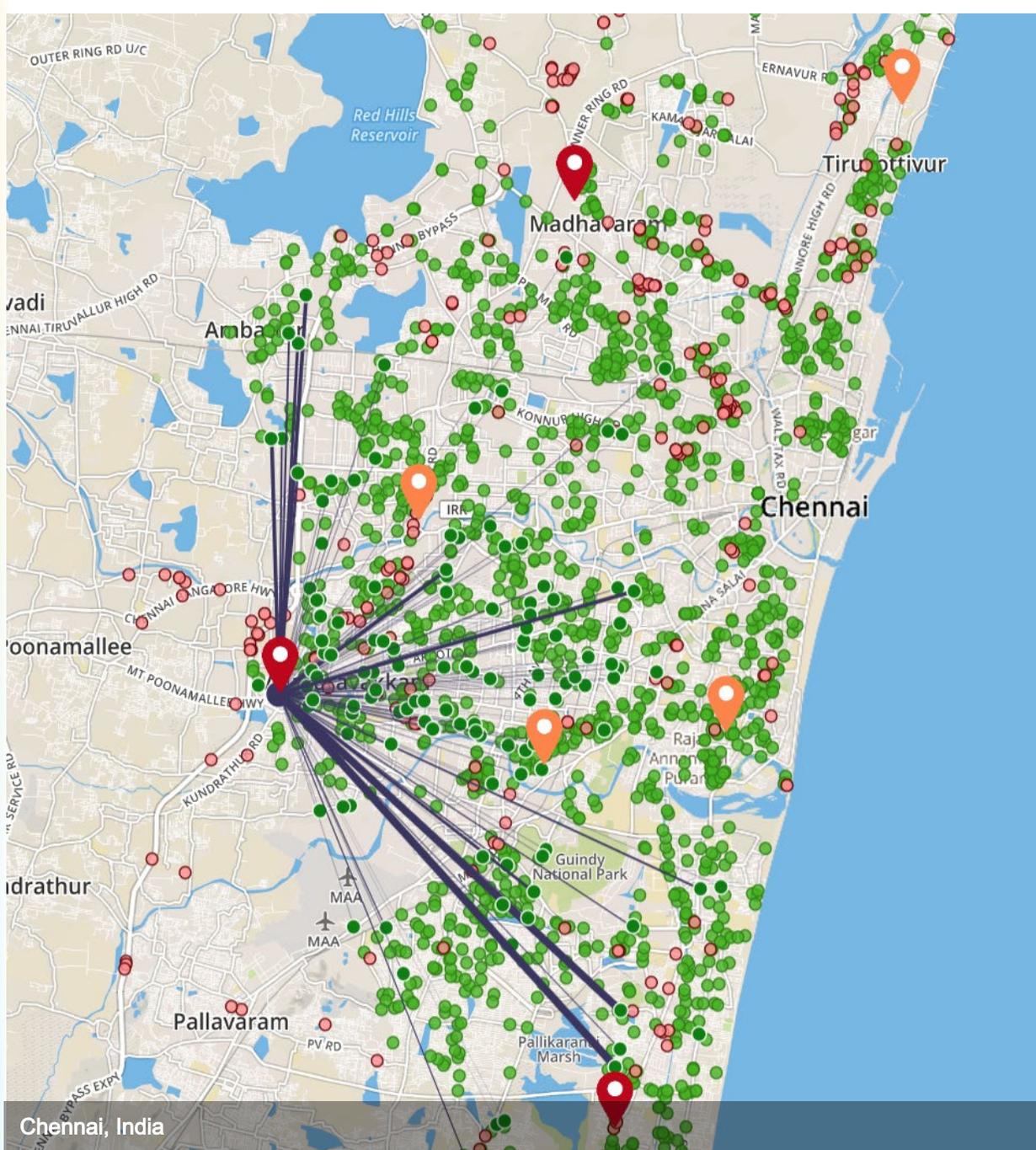
USD 4

Average earnings of a waste-picker 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://royalsocietypublishing.org/doi/10.1098/rsos.160764#:~:text=Despite%20significant%20development%20in%20social,than%20properly%20landfilled%20%5B2%5D>
3. <https://indianexpress.com/article/cities/delhi/for-waste-pickers-in-noida-constant-fear-of-contracting-covid-19-on-the-job-6531666/>





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 *Bomma* 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)



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 incur zero 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 (Large Scrap shops)



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

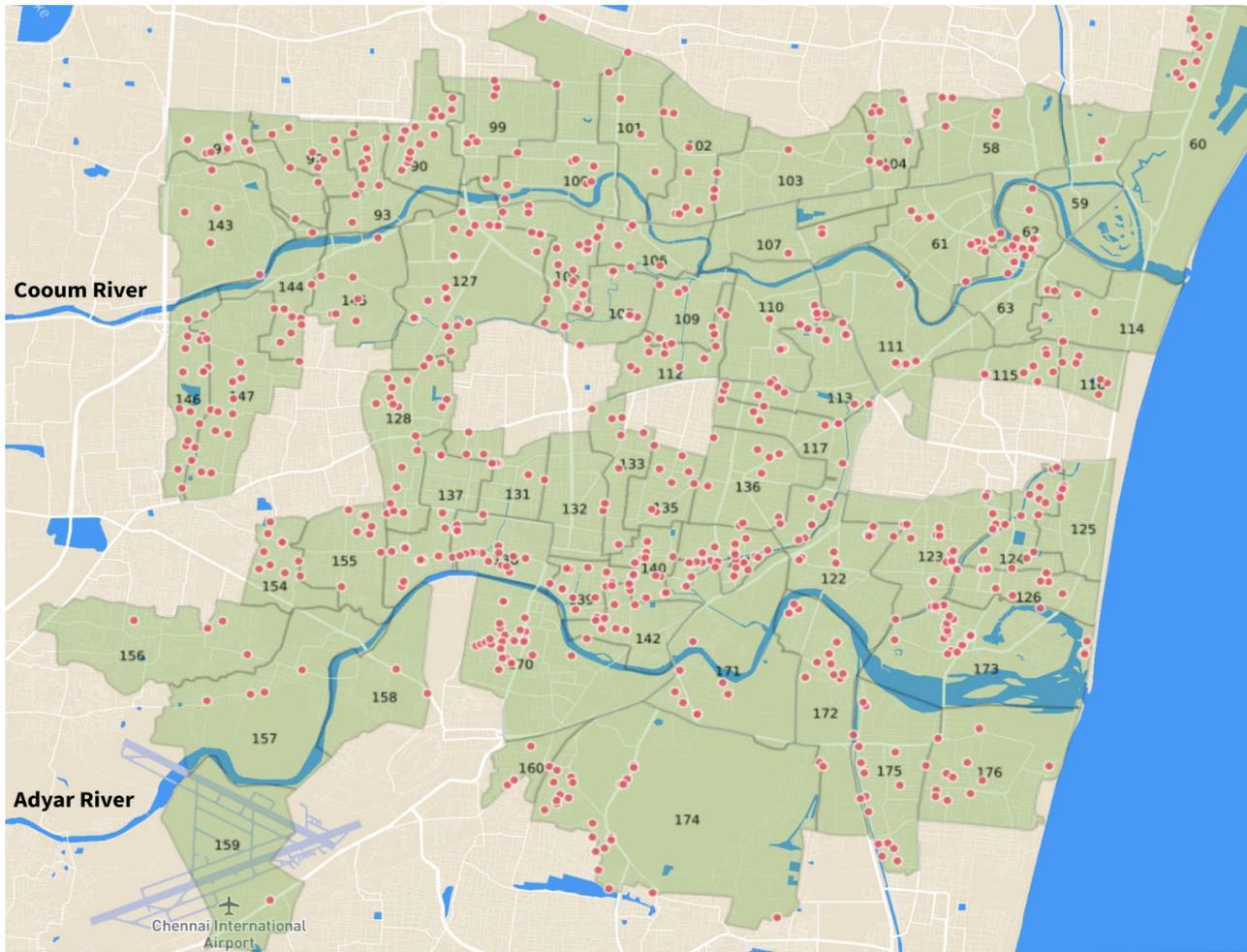


These are stakeholders who buy specific grades of post-consumer scrap material from L1s and L2s and convert them to usable secondary raw material for the manufacturing industry.

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



High volume offtakers drive incredible collection rates by the informal sector



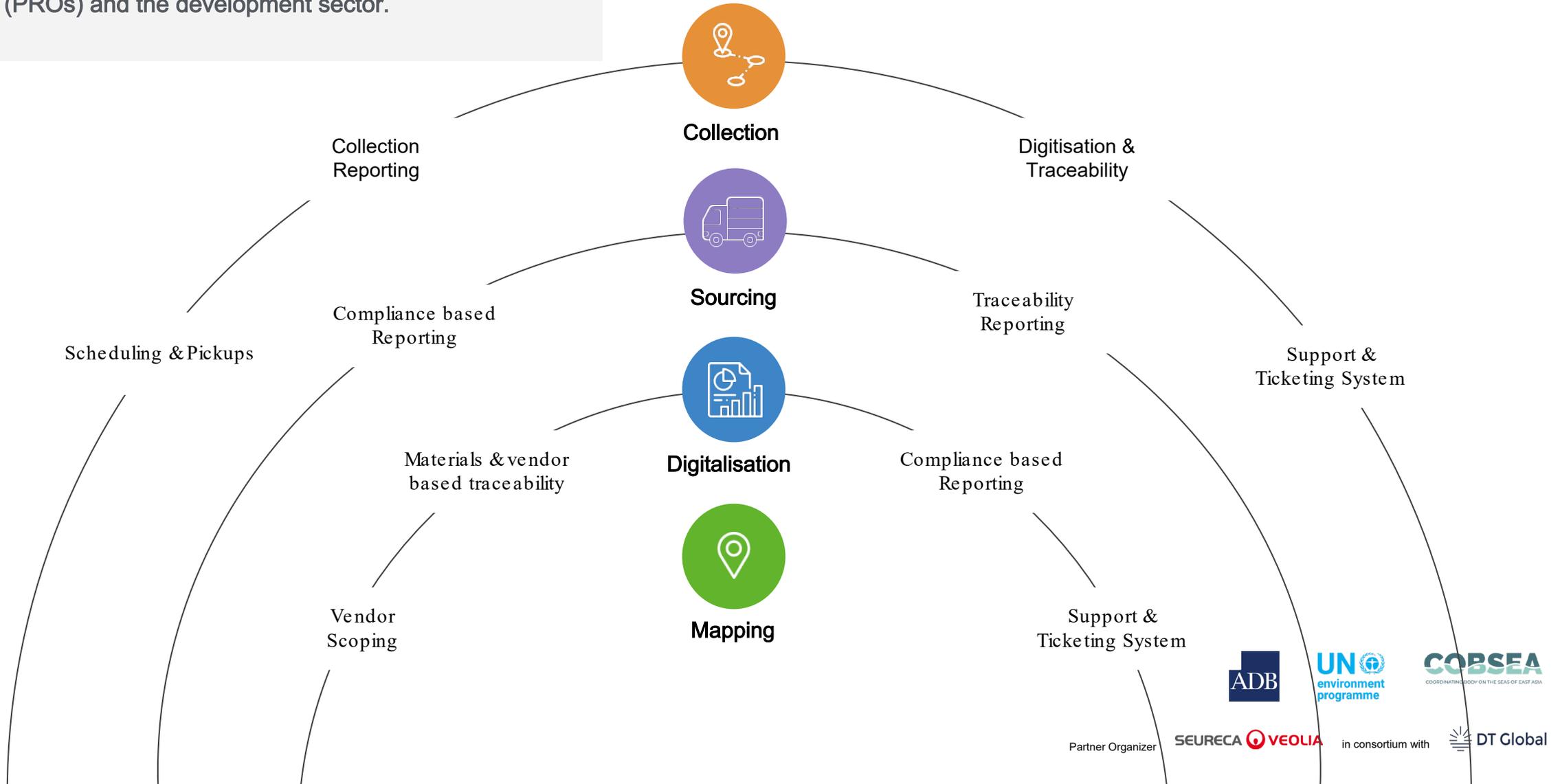
Wards across Cooum River		
Plastic Type	Generation Volume/month	IS collection volume/month
PP/PE	1986.0 MT	271.1 MT
Low Value Plastics	429.9 MT	48.9 MT
PET	110.2 MT	98.0 MT
PVC	73.9 MT	108.8 MT
PS	68.2 MT	103.1 MT
Other	18.5 MT	5.0 MT
Total	2686.7 MT	634.9 MT

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

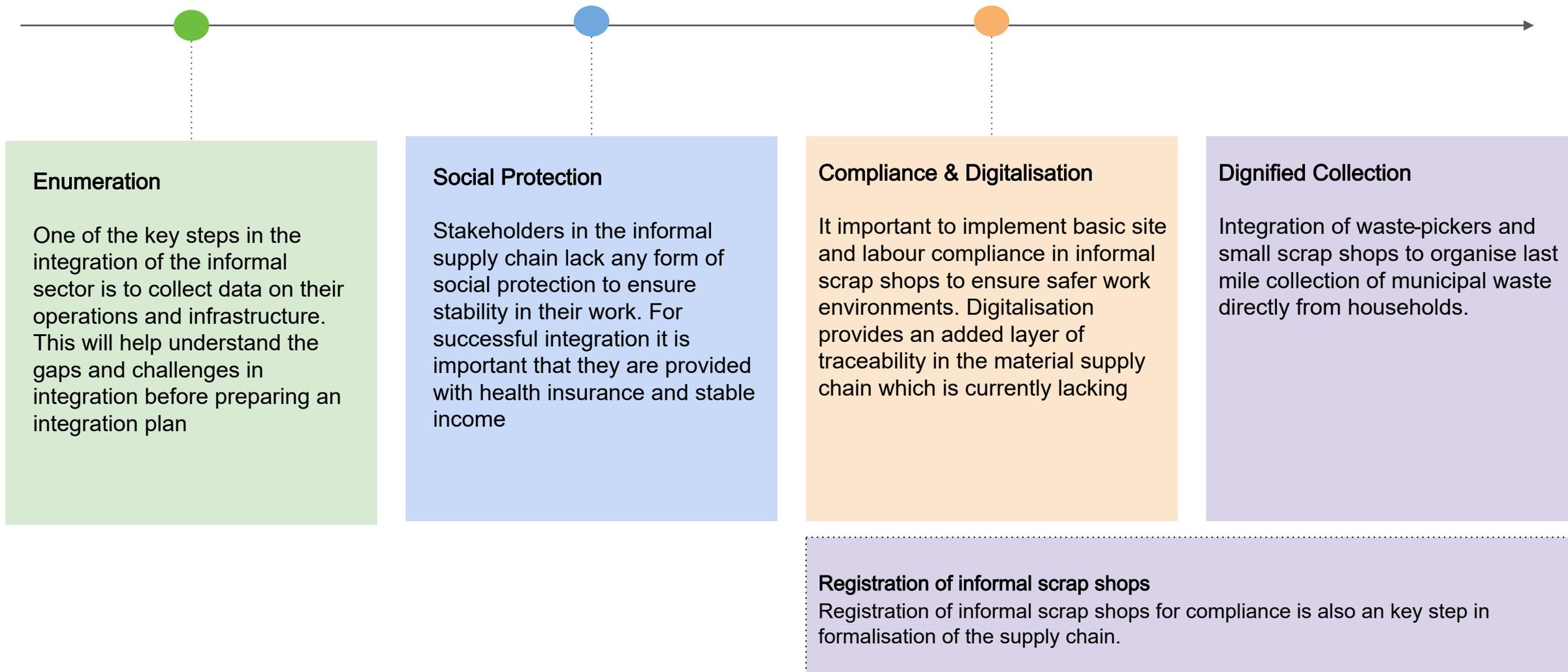


At maturity, KC aims to position itself as a technology & services provider for informal sector integration in SE Asia —working with Municipalities, Recyclers, Producer Responsibility Organisations (PROs) and the development sector.

Kabadiwalla Connect | Product Offerings



Proposed integration pathway for the informal waste sector



Grants



GLOBAL PARTNERSHIP
FOR SUSTAINABLE DEVELOPMENT DATA



Networks



Commercial



India | Indonesia | Africa



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By leveraging the informal waste ecosystem, it could be possible to collect single-stream municipal waste from cities and towns in the Global South at an industrial scale in a cost-effective and inclusive manner





THANK YOU!



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