

DISCUSSION PAPER

INTEGRATING THE INFORMAL SECTOR FOR A STRONGER REPAIR ECONOMY



The Informal Sector's current involvement in the Repair Economy

Repair is an essential aspect of circular economy (CE) to extend the life of products and materials. The informal repair economy (IRE) plays a crucial role in preserving material value, yet its contributions are often excluded from key business and policy discussions on the CE. This oversight is significant, considering that more than 61% of the global workforce operates in the informal economy¹. Among these workers, waste pickers are one of the largest urban informal labour groups who form a core of the local CE practices in cities. Current CE models remain largely centred on formally organised markets, leaving a major gap in how circular practices are envisioned and implemented for the informal recycling sector (IRS).

Despite the favourable policies that have supported waste picker co-operatives and member-based organisations in several countries (India, Brazil, South Africa, Tanzania, Philippines, Nigeria, Pakistan, Bangladesh, Indonesia), large structural differences between these groups still exist. Examples include a lack of leadership skills, availability of space, infrastructure and equipment, internal governance², levels of formal support, and the ability to establish contracts with governments or private companies.

These disparities affect their working conditions, productivity, and income³. The IRS market is highly dynamic and there are drastic fluctuations in prices, thus affecting stability in income and the livelihoods of the workers⁴. Most do not have any social security as they do not have bank accounts and are forced to depend upon unpredictable cash flows.

Many countries in Africa and the Asia-Pacific have a thriving repair economy. For instance, in Kenya, there is already an established market for repair and reuse in the informal sector, accounting for 83 per cent of the total employment in the country. But there is very little data on where these workers exist in the invisible spaces of repair and reuse⁵.

An enabling environment for repair relies on factors such as access and the right to repair, a competitive market and the general mainstreaming of repair among consumers. This can contribute to the creation of jobs and building up of skills in the labour force. Currently, value chains in multiple sectors, including plastics, are characterized by high consumption rates, short product lifecycles, and few repair options. This limits the involvement of the IRS in grass-root level interventions. The low quality of products leads to limited lifespans; this undermines the economic incentive for repairs, which end up being equally or more expensive than the purchase of a new product. Other barriers to repair include the risk of repair quality, the availability



of spare parts, and the higher costs of repair for certain product categories⁶.

One of the most pressing challenges for the IRE is the scarcity of replacement parts and raw materials. Manufacturers restrict access to components by designing products to be non-repairable or by limiting the availability of spare parts to authorised service centers⁷. This hampers the ability of informal repair workers to restore or refurbish products, particularly electronics and plastic items. The absence of well-established reverse logistics systems, where broken items or used components can be reintegrated into the repair supply chain, further compounds this issue.

As a result, the IRS is forced to rely on sourcing parts from discarded goods, leading to inefficiencies and lower-quality repairs. Also, tracking local innovations developed by IRS is often tricky due to their local nature, mostly catering to self-use or for their community members. Informal repair networks are not accounted-for in the mainstream economic survey because of lack of data⁸. The IRE also struggles with the absence of affordable and accessible spaces for conducting repair activities. In many cities, repair workers operate from makeshift stalls, crowded street markets, or temporary kiosks without proper infrastructure or security. As urban spaces become increasingly privatized and commercial rents rise, it becomes

harder for informal workers to find permanent locations for their businesses. This lack of stable working spaces reduces their visibility, limits customer trust, and restricts opportunities to expand their services. Additionally, public policies⁹ mostly favour large-scale retail over community-based repair activities, further marginalizing the informal sector. For example, the newly launched Right to Repair framework in India caters to consumer brands and electricals not involving the wider IRE.

Capacity building, along with reskilling or upskilling, is another challenging concern for the IRE. Waste pickers need training and investment to adapt to new material management systems, technologies (digital and mechanical), environmental compliance procedures, and occupational health and safety. But materials management systems should also be technologically appropriate, so that they do not push out actors who may not be able to adapt to such systems¹⁰.

Waste pickers supporting the IRE remain among the most vulnerable and exploited stakeholders. They are often excluded from formal labour markets and marginalized due to the stigma associated with waste and poverty, lacking formal recognition and labour rights. This results in low incomes, hazardous working conditions, and economic exploitation, particularly within plastics value chains where business and human rights principles are rarely applied (IAWP, 2023). Women and children in the sector face especially harsh conditions, exacerbating their vulnerability. The limited gender-disaggregated data and evidence around the comparative challenges that women in the IRE face, means that their contribution in tackling this pollution, and the resulting impact on them, have not been yet adequately recognized.



Strategies for integrating the Informal Sector in the Repair Economy

(i) Legal recognition and entitlements for waste pickers in the Repair Economy

- Conduct analysis and modelling of IRS and waste pickers' activities to quantify their contribution to the repair economy, and plastic pollution prevention at national, sub-national and local level.
- National plastic policies and regulatory frameworks¹¹ can be developed with the meaningful participation of the IRS and include clear goals, measurable targets, monitoring systems, and enforcement mechanisms. Policies¹² to include detailed plans for research and mapping to identify all actors in materials management systems, assess their contributions, market share, and material impact, ensuring inclusion in policy planning and implementation.
- Cities can focus on formalising¹³ waste pickers as workers working in the resource recovery industry, providing them access to registration and social protection. Local municipal bylaws could be revised and updated in consultation with the IRS to formally recognise and include their critical role in repair activities, including the IRS being properly defined in the bylaws.
- Crucial to identify the IRS stakeholders in their operational area, list them, and create their material recovery¹⁴ and socio-economic profiles¹⁵.
- Periodically evaluate equity and opportunity distribution, providing data to guide and inform necessary policy amendments.

(ii) Access to training programs, tools, and technologies to improve repair practices

- Implement training and capacity-building programs for the IRS¹⁶ advocacy and membership organisations, enabling them to conduct scientific studies to quantify and characterise the informal repair sector's activities. Consider recruiting 'ambassadors' to champion repair initiatives in their communities.
- Job retraining or skill-building programmes on circular models, in combination with social support programmes such as in healthcare, and child education can support adult career transitions and minimise periods of vulnerability. Certification schemes can be developed to improve confidence in the quality of repair that the IRS offers.
- Waste pickers are gaining access to mobile phones, mobile internet, and mobile money. Thus, capacity building initiatives could provide digital training to strengthen local plastic waste collection systems within informal waste networks by testing digital applications, such as blockchain and mobile waste tracking apps, to enhance data management, transparency, and collection rates.
- Introduce and strengthen local reverse logistics systems that streamline the recovery of components from e-waste and consumer goods. These systems can enable the redistribution of usable parts to the repair ecosystem, reducing material shortages.
- The progress of such initiatives needs to be regularly monitored or audited, either by the municipality or concerned authority, to mainstream informal workers into the repair economy.

(iii) Financial support and microcredit options for informal sector entrepreneurs

- Municipalities can collaborate with local waste picker organisations, cooperatives, or with local NGOs, CBOs or private partners, to upgrade waste pickers income prospects. This can be achieved by generating sanctions to ensure fair pricing from waste dealers, or by providing fair buy-back of recyclables¹⁷ at the recovery centres, or by supporting fair co-operatives to set up direct contracts with waste dealers (as observed in the Pune (SWaCH) Model).
- Repair interventions could be mainstreamed, mandating governments and companies to allocate resources (both financial and technical), to back up the deployment of convenient, accessible, and widespread infrastructure that supports the CE including the IRS.

- Microfinance institutions¹⁸ (MFIs), though small in scale, play a critical role in serving economically significant segments, including the IRS. While many households rely on loans from multiple MFIs, they often also resort to informal loans from finance companies and moneylenders due to the limitations of MFI loans. Households would benefit from larger loan amounts and more flexible repayment terms to better meet their needs.

(iv) Establishing Accessible Return Points for Materials

- Local governments (municipalities) could include repair zones in urban development plans, ensuring affordable rental spaces are available for repair businesses. Public facilities like libraries, schools, or community centres can be adapted to host pop-up repair events or offer co-working spaces for repairers.
- Cities can establish community repair centres where informal workers can access shared tools, equipment, and space at minimal or no cost. These centres can function as multi-purpose facilities, offering both workspaces and workshops for skill development¹⁹.
- Establish city-run repair centres that can offer workshops on repair and upcycling techniques to teach residents repair skills. In addition to educational services, these facilities can integrate the IRS to repair unwanted items, such as clothing, electronics, and toys, and make them available to the community through donation or affordable resale. To maximize impact, it is essential for cities to collaborate with local businesses, ensuring that municipal services complement rather than compete with existing repair enterprises.

(v) Collaboration between governments, NGOs, and private companies to support the informal sector.

- Collaboration between governments, private companies, environmental and economic justice groups, workers' organisations, and other relevant stakeholders is essential for creating circular repair ecosystems in cities^{20,21}.
- Local, regional repair hubs can be set up where repairers can access reusable materials and spare parts. These hubs can collect components from discarded goods, such as electronics and appliances, and redistribute them to repair workers. Collaborations with recycling centres or manufacturers can ensure a steady supply of reusable materials.
- Municipal support programmes can offer subsidies, grants, or tax exemptions to repair enterprises that promote sustainability and engage with the informal

sector. Municipalities can also organize repair fairs and markets, providing temporary public spaces for repairers to showcase their services and connect with customers.

- Clear roles and responsibilities can be outlined: governments to create inclusive and integrated frameworks, while private stakeholders and worker organisations could be encouraged to participate in social dialogue, contribute to policy development, and initiate their own efforts to mobilise the repair economy.

References and Further Reading

- (i) WIEGO Briefs and Resources, <https://www.wiego.org/wiego-briefs>
- (ii) IAWP's Vision for a Just Transition for Waste Pickers under the UN Plastics Treaty, 2023 <https://globalrec.org/document/just-transition-waste-pickers-un-plastics-treaty/>
- (iii) Global plastic pollution and informal waste pickers, 2023, <https://www.cambridge.org/core/journals/cambridge-prisms-plastics/article/global-plastic-pollution-and-informal-waste-pickers/4AA02B24EAD09A380904BFD389600E06>
- (iv) Necessity-driven circular economy in low-income contexts: How informal sector practices retain value for circularity, 2022, <https://www.sciencedirect.com/science/article/pii/S095937802200111X#b0125>
- (v) Empowering the Informal Economy: Strategies for Integration and Growth, <http://www.gdrc.org/informal/empowering-is.html>
- (vi) How to grow your city's reuse and repair economy, 2022, https://www.c40knowledgehub.org/s/article/How-to-grow-your-city-s-reuse-and-repair-economy?language=en_US
- (vii) Landscaping the Repair and Reuse Economy in Kenya, 2022, https://static1.squarespace.com/static/61a3a8ee0e9c1028ed45fdcf/t/6256ae4fd817b2407bd1efc2/1649847917396/Landscaping+the+Repair+and+Reuse+Economy+in+Kenya+-+Final+Report_March+2022.pdf

Endnotes

- 1 Women and Men in the Informal Economy: A Statistical Picture, 3rd Edn. Geneva: International Labour Organization – ILO, <https://www.ilo.org/publications/women-and-men-informal-economy-statistical-picture-third-edition>
- 2 In India, the Solid Waste Management Rules, 2016 and Plastic Waste Management Rules, 2016 and amendments thereof (2022, 2024) acknowledge the contributions of waste pickers, their effective implementation at the grassroots level remains lacking.
- 3 Grassroots waste picker organizations addressing the UN sustainable development goals, 2020, <https://www.sciencedirect.com/science/article/abs/pii/S0305750X20303223>
- 4 Innovating for The Circular Economy, 2023, <https://www.taylorfrancis.com/books/edit/10.1201/9781003201816/innovating-circular-economy-rachna-arora-dieter-mutz-pavithra-mohanraj>
- 5 Landscaping the Repair and Reuse Economy in Kenya, 2022, https://static1.squarespace.com/static/61a3a8ee0e9c1028ed45fdcf/t/6256ae4fd817b2407b-d1efc2/1649847917396/Landscaping+the+Repair+and+Reuse+Economy+in+Kenya+-+Final+Report_March+2022.pdf
- 6 Countries such as India, Bangladesh and Pakistan have a thriving repair economy giving jobs to millions of workers (both formalized and informal) in sectors including Plastics, Textiles, Shoes, Electronics and consumer electrical goods.
- 7 Repairing the circular economy: Public perception and participant profile of the repair economy in Hull, UK, 2021, <https://www.sciencedirect.com/science/article/pii/S0921344921000549>
- 8 FRUGAL CULTURE MEETS INFORMAL REPAIR ECONOMY IN AN INDIAN CITY: ‘A PERFECT MATCH!’, 2022, <https://themaintainers.org/frugal-culture/>
- 9 The Ministry of Consumer Affairs, Government of India has established a committee to develop a Right to Repair framework, allowing consumers affordable repair options instead of replacing products. Initially focusing on sectors like farming equipment, electronics, and automobiles, the framework will require manufacturers to share product details, fostering third-party repairs and supporting job creation in the repair industry. <https://righttorepairindia.gov.in/index.php>
- 10 IAWP’s Vision for a Just Transition for Waste Pickers under the UN Plastics Treaty, 2023, <https://globalrec.org/document/just-transition-waste-pickers-un-plastics-treaty/>
- 11 Several countries have incorporated waste picker recognition into their national waste management laws and norms- Brazil, India, Colombia, Argentina, Chile and South Africa (IAWP, 2023).
- 12 The European Union adopted the Right to Repair Directive (“R2RD”) in June, 2024, which will require manufacturers of many types of consumer goods to provide repairs beyond the liability period, among other requirements. https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ.L_202401799
- 13 Formalization of the informal economy can be done via registration, taxation, organization and representation, legal frameworks, social protection, business incentives and support. <https://www.weforum.org/agenda/2024/06/what-is-the-informal-economy/>
- 14 Waste inventory tools can be utilised by mapping the quantities of resources handled by IRS. These details can then be published in the municipality website. This data would be crucial for effective decision-making to include/integrate/involve IRS in cities and will also support to develop circular action plans for cities or social businesses.
- 15 Cities can raise awareness of local repair services by developing directories that connect residents with repair businesses and nonprofits. For example, Restart, a London-based social enterprise, created an online Repair Directory with support from local councils, mapping repair shops across the city. Similarly, the City of Austin provides a Reuse Directory on its website, listing places for donating, reselling, renting, and repairing items. https://www.c40knowledgehub.org/s/article/How-to-grow-your-city-s-reuse-and-repair-economy?language=en_US
- 16 Argentina’s National Waste Picker Federation (FACCyR) has developed manuals and training programs to build the capacity of thousands of workers across the country, even using fun and interactive tools like video games, <https://crearjuegos.ar/videojuegos/play/Argentina%20Recicla>
- 17 In Argentina, waste pickers are given exclusive rights to recyclables under the ‘Guide for the Implementation of Integrated and Inclusive Waste Management’. This guide ensures that registered waste pickers have access to a Complementary Social Wage System, which, when combined with income from selling recyclables, can provide more than a subsistence income. The wage supplement can be offered at local, provincial, or national levels (IAWP, 2023).
- 18 MFIs possess deep operational knowledge of local business environments and entrepreneurs skills, allowing them to effectively channel funds into productive lending opportunities, supporting local economic growth.
- 19 Adapting from the model that originated in Amsterdam, Repair Cafe in Bengaluru (India) is a space for repairers, volunteers and enthusiasts to come together and bond over the craft of repair. The café is open to both traditional repairers from Bengaluru’s repair markets as well as hobbyists who are passionate about taking stuff apart and putting it back together. Around it, a community has formed, which strongly believes that instead of discarding or upgrading to a better model, one can try their hands at giving things a new lease of life. This could in turn help reduce consumerism. This is a good way to start connecting to the traditional networks that embody the ‘repair, reuse, recycle’ philosophy, from kabadiwalas, seamstresses, to local bike repairmen and more. <https://citizenmatters.in/repair-cafe-comes-to-bengaluru-if-it-is-broken-fix-it/>
- 20 For Ambikapur (a town in Chattisgarh, India), when the MSW collection system migrated from wage labor to a community structure, worker efficiency and occupational safety improved including livelihoods. The city has adopted a low-cost, self-sustainable resource management model that focuses on three core areas – participation of women (informal workers), viability and replicability. Around 447 members from 18 Area Level Federations (34 SHGs) are responsible for segregated door to door collection of waste from over 27,000 HHs and over 4,500 commercial entities. Approximately 45-50 TPD of MSW is collected and bought to secondary segregation centers. Sorted dry waste (into 24 fractions) is procured by listed vendors who purchase recyclable non-biodegradable material at fair prices. Each ALF (18) on average earns INR 400,000-500,000 (approximately 5000 USD) per month from the sale of biodegradable and non-biodegradable waste. A tertiary segregation caters to waste that exceeds the capacity of secondary segregation centers. Here further sorting of non-biodegradable items into 169 categories take place and it houses a recycling facility.
- 21 The Indian urban resource management ecosystem is now moving towards the establishment of Reduce, Reuse, Recycle (RRR) Centres as part of the government led Clean India Mission. These centers will play a pivotal role in fostering sustainable practices, reducing waste, and promoting the responsible management of resources for a cleaner and greener environment including repair. <https://pib.gov.in/PressReleasePage.aspx?PRID=1925939>

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