



MICRO-CREDENTIAL

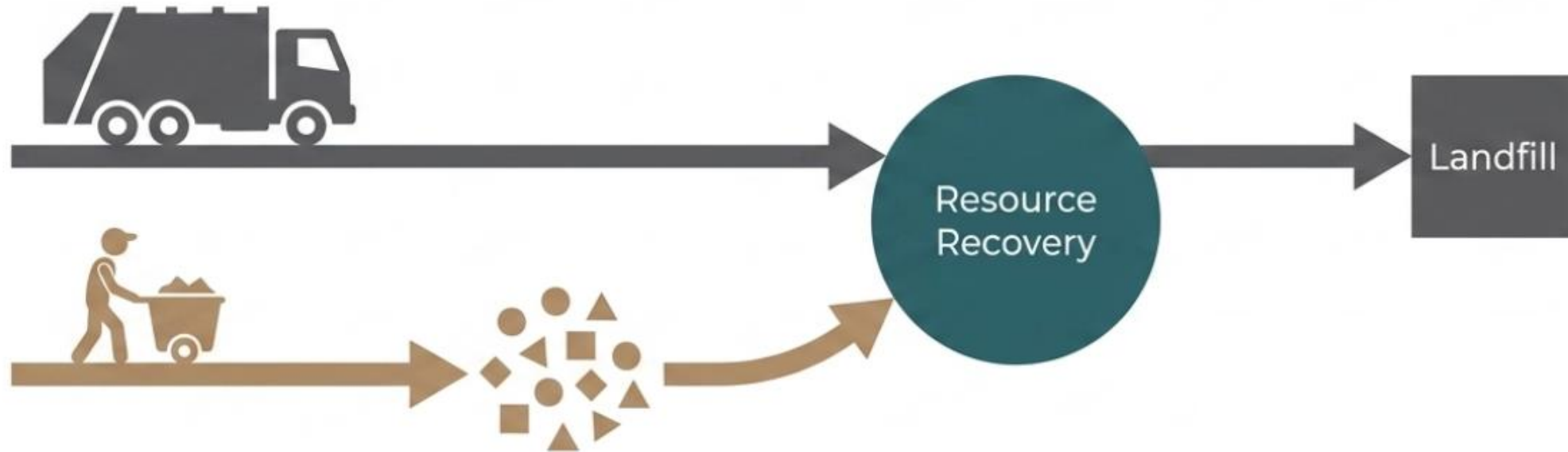
CIRCULAR ECONOMY FOR LAND AND WASTE MANAGEMENT

12. – Economic and Social Dimensions

Informal sector and waste pickers

CELWS-W12-V03





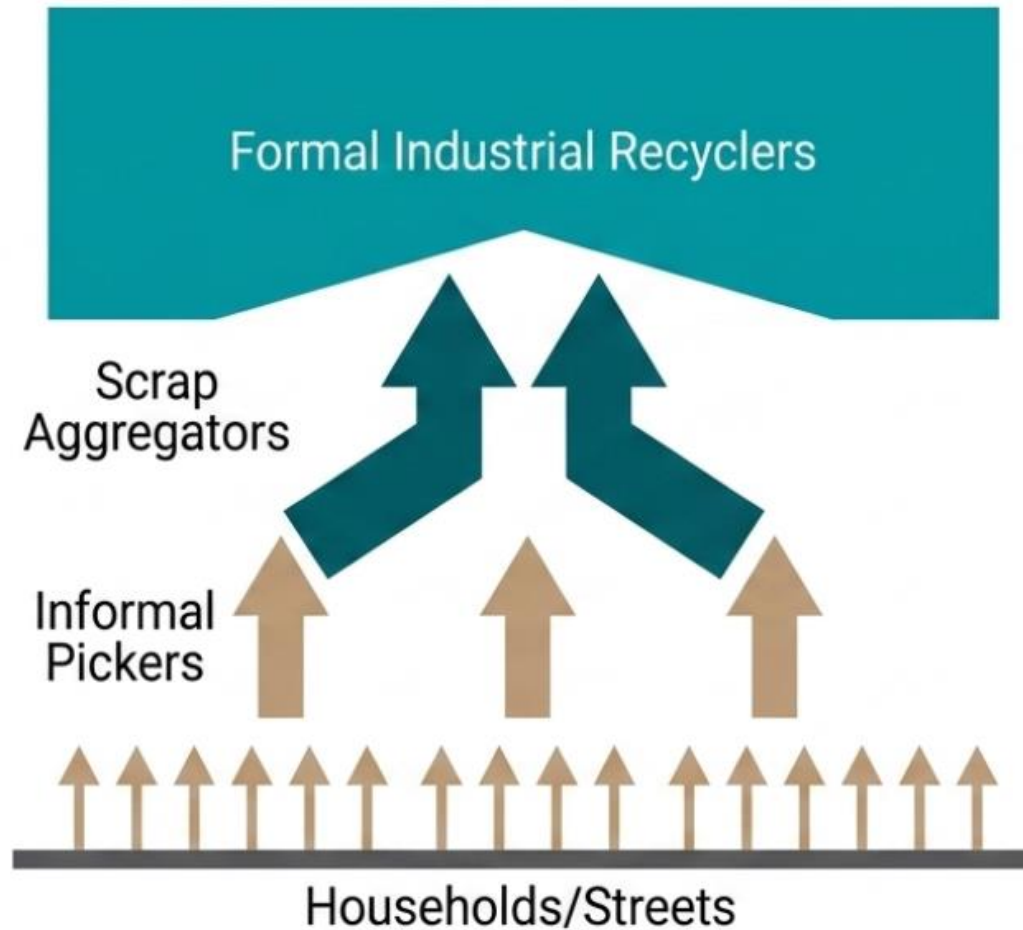
- Global waste generation averages 55 billion kilograms daily.
- While formal municipal systems focus on linear disposal, a shadow infrastructure of unregistered workers acts as the primary recovery mechanism.
- This parallel circuit provides massive, unrecorded environmental subsidies.



- The informal sector is highly organized but heavily reliant on vulnerable demographics (migrants, retirees, homeless individuals).
- In cities like Bishkek, up to 75% of informal street pickers belong to marginalized groups utilizing waste as a livelihood of last resort.

Street Pickers	Itinerant Buyers	Dumpsite Scavengers
		
Zone: Public bins and streets	Zone: Direct household purchasing	Zone: Active landfills and extraction sites



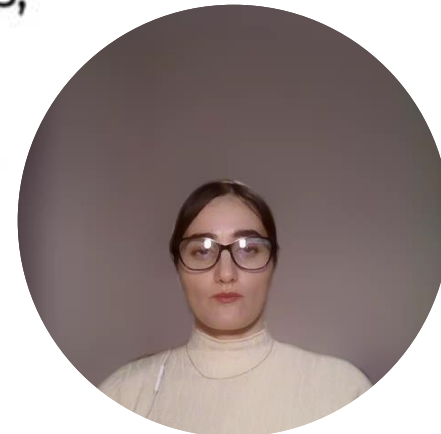


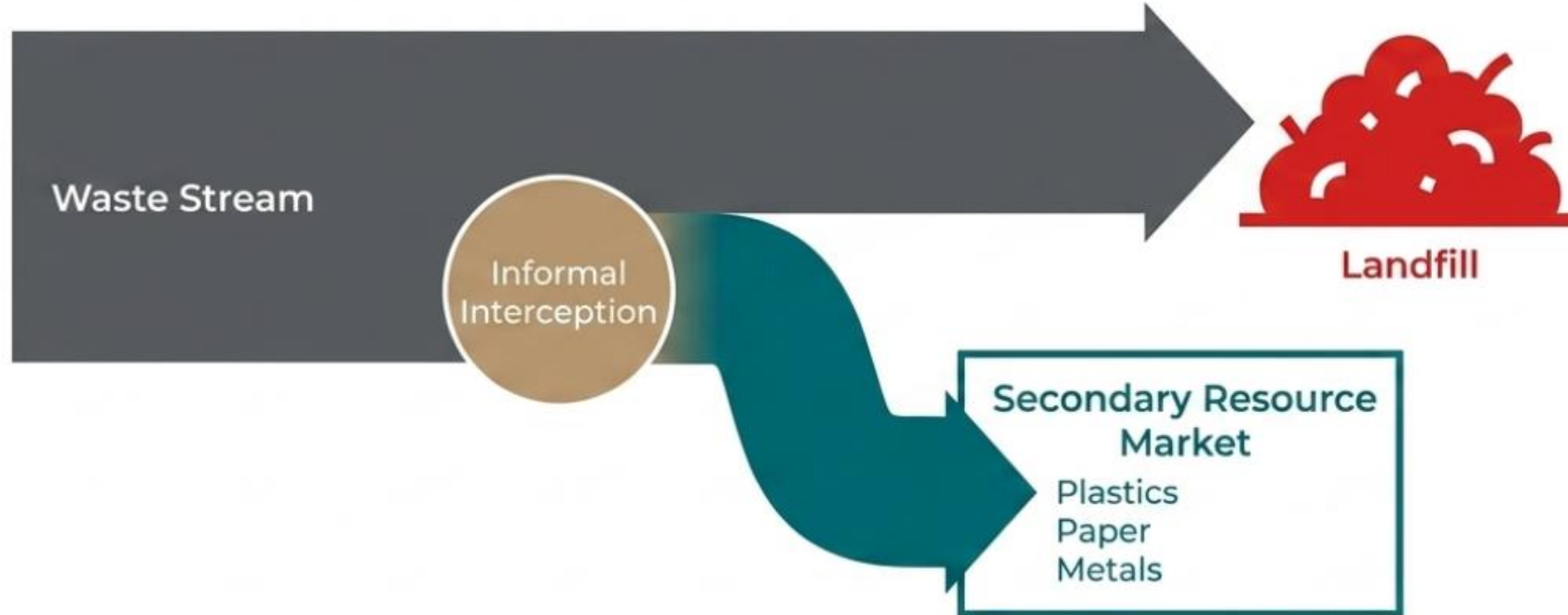
- Informal recovery acts as a highly efficient reverse logistics network.
- Collected recyclables are rapidly sorted and processed in informal workshops.
- These materials ultimately flow into formal secondary commodity markets, bridging the gap between local scavenging and global industrial demand.





- Properly integrated sorting and recovery can generate immense municipal wealth—potentially \$64 billion globally.
- Concurrently, the informal recycling industry provides livelihoods for millions, including an estimated 4 million waste workers operating in India alone.





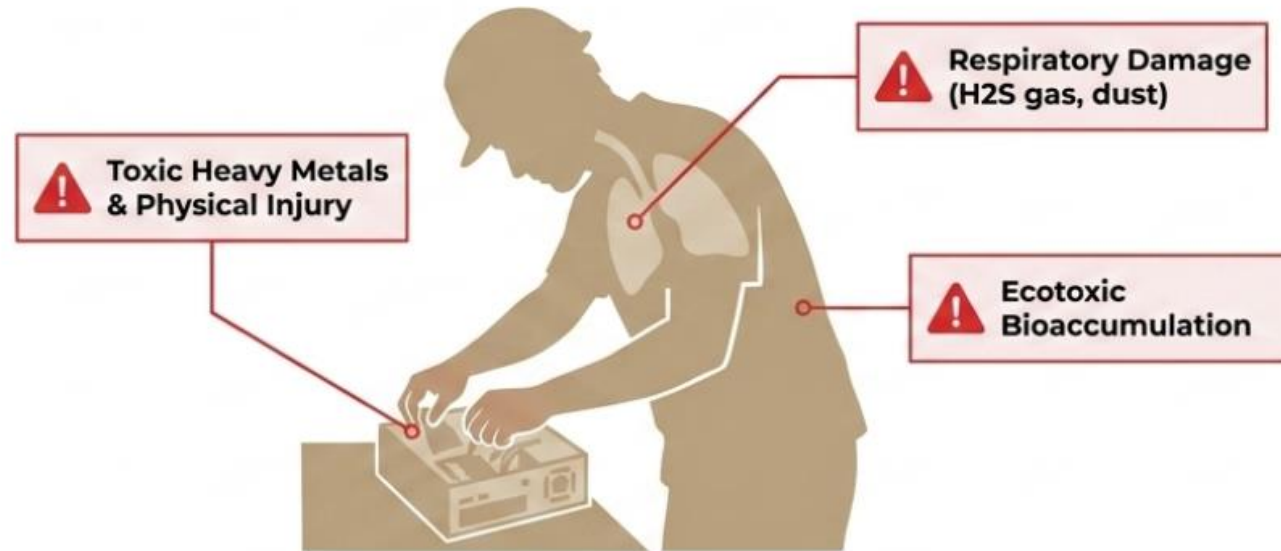
- Informal networks achieve significant **diversion rates**—up to 20% in dense urban areas like Mexico City.
- In Kyrgyzstan's capital, informal workers collect roughly **35,000 tons of recyclables annually**, actively mitigating **air, water, and soil pollution** that would result from unchecked landfilling.





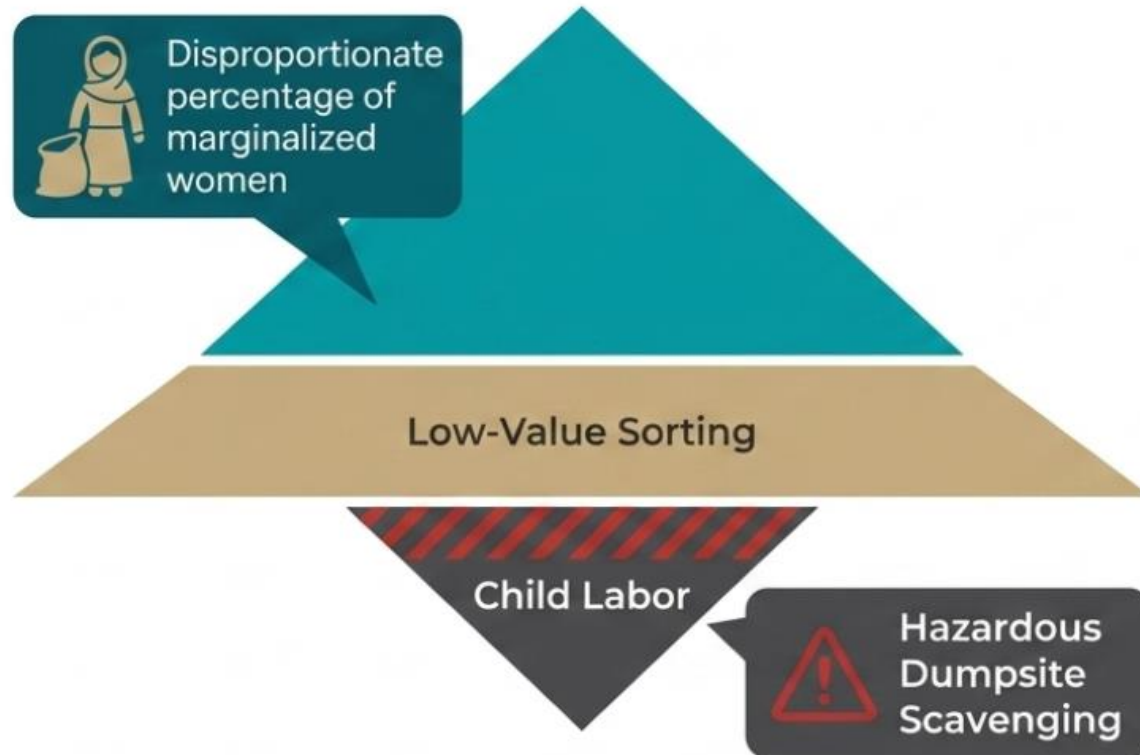
- The physical and symbolic properties of waste reinforce patterns of distancing and social inequality.
- Despite their environmental contributions, informal workers are frequently excluded from policymaking, lacking legal recognition, protection, and job security.





- Unregulated circularity comes at a severe cost to human health.
- Workers are routinely exposed to hazardous materials, volatile organic compounds, and dangerous environments like active landfills without baseline protective equipment.

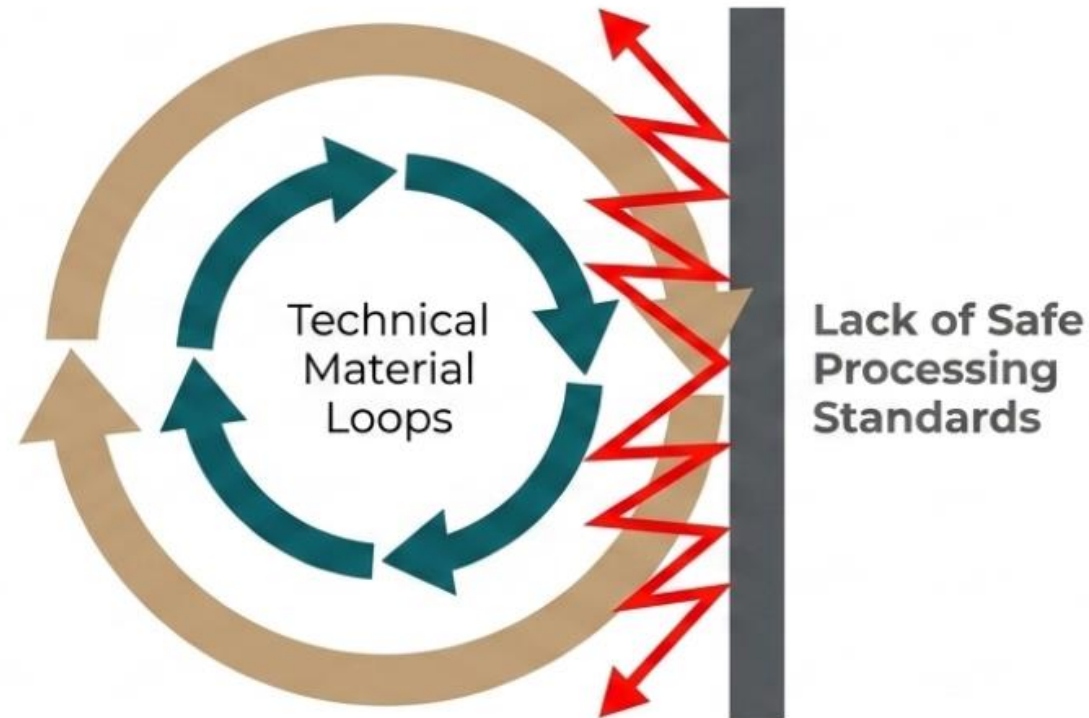




- The informal waste economy relies heavily on vulnerable groups escaping extreme poverty or abusive environments.
- Women and children frequently occupy the lowest-earning, most hazardous tiers of the recycling chain, extracting marginal value from highly toxic sites.



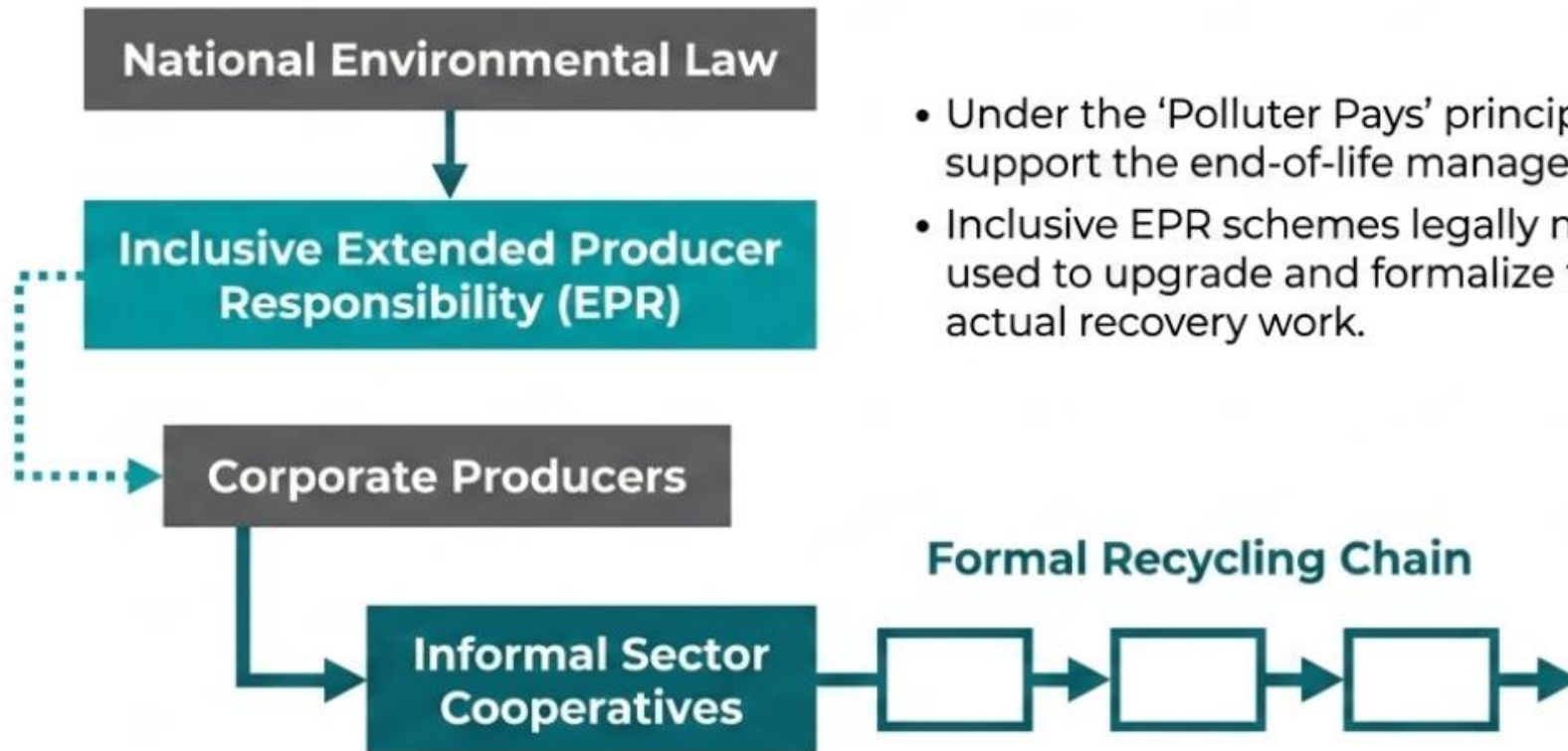
- While the informal sector recovers vast quantities of material, unregulated processing methods (e.g., open burning of wires, uncontrolled dumping of residuals) generate severe secondary pollution.
- True circularity cannot exist without integrating these workers into safe, regulated processing standards.





- Cooperative models provide the critical bridge between marginalized workers and municipal governance.
- Formal recognition transforms precarious scavenging into secure, dignified green employment while drastically improving material recovery quality.





- Under the 'Polluter Pays' principle, manufacturers must financially support the end-of-life management of their products.
- Inclusive EPR schemes legally mandate that these corporate funds are used to upgrade and formalize the informal cooperatives doing the actual recovery work.

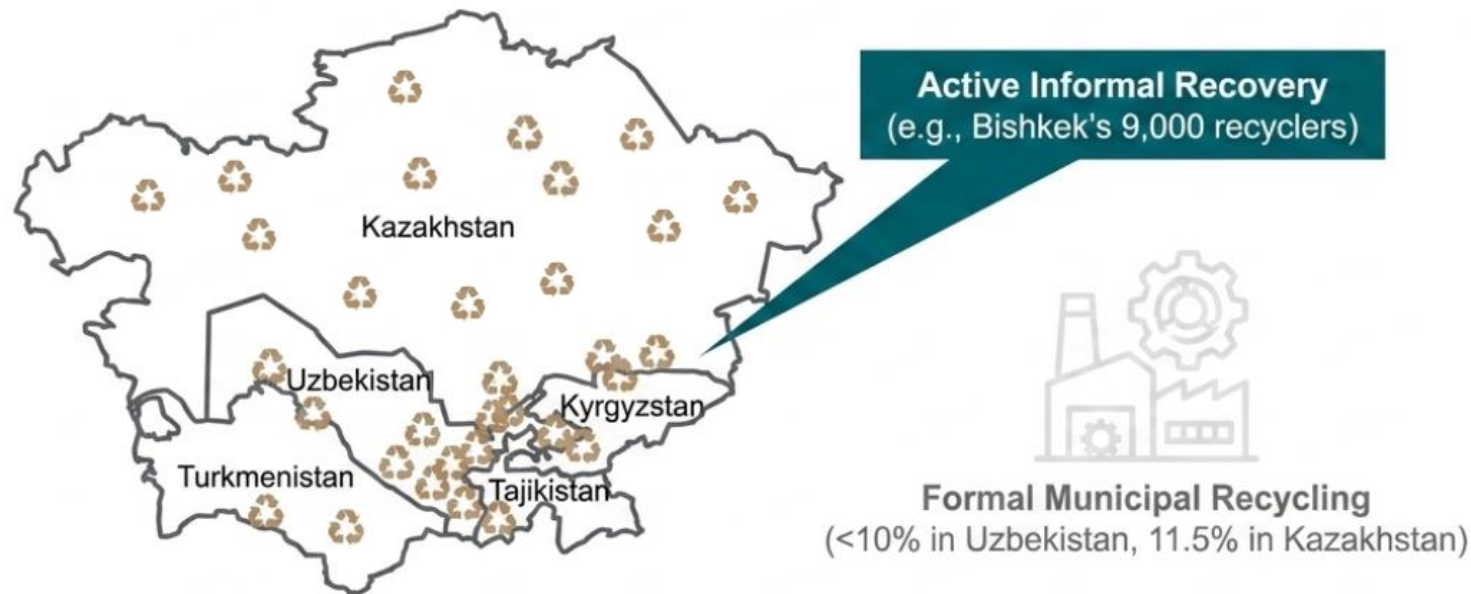




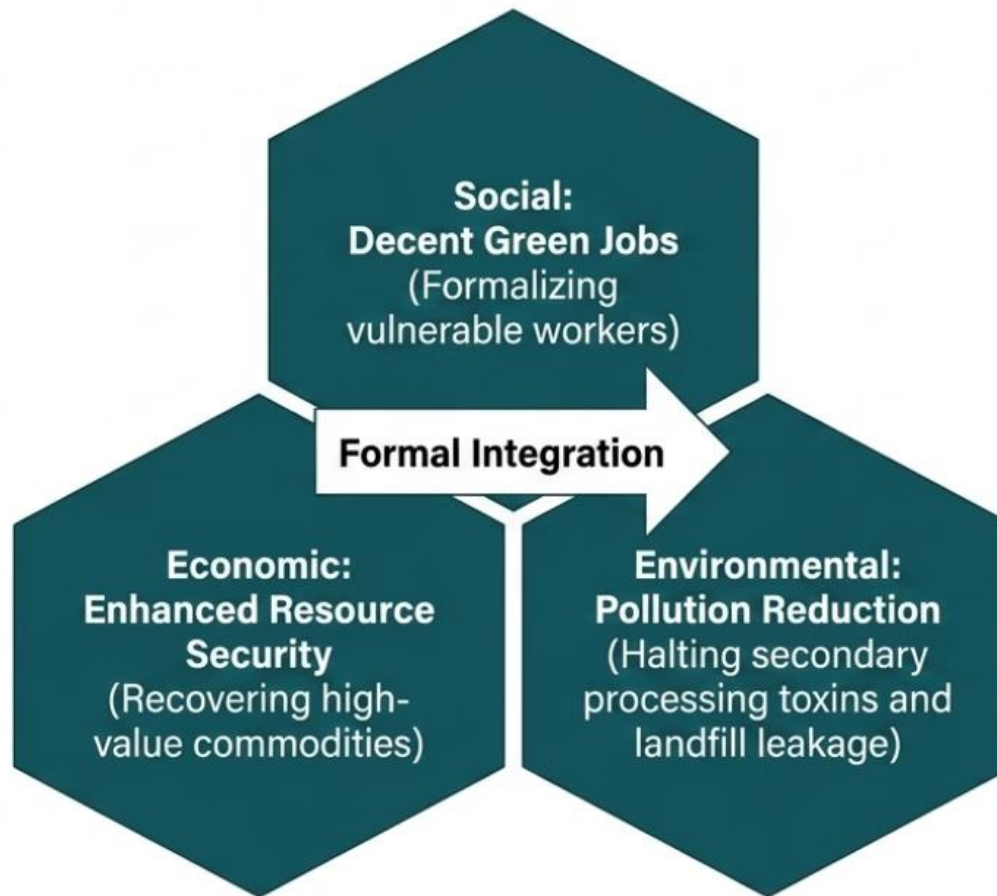
- Successful pilot programs prove that municipalities can partner directly with informal networks.
- By mandating source segregation and contracting cooperatives, cities achieve higher recycling rates at lower operational costs.



- Central Asia faces low official resource productivity and high reliance on landfills (often unauthorized).
- However, highly active informal networks already exist. The primary challenge is not building a workforce from scratch, but formalizing and equipping the existing shadow infrastructure.



Opportunities for Inclusive Circular Economy



- Transitioning the informal sector is not just a social imperative; it is an economic and environmental necessity.
- By investing in the formalization of waste workers, Central Asian municipalities can simultaneously achieve climate targets, resource efficiency, and poverty alleviation.





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