

Integrating informal sector recycling into waste management – Insights from value chain analysis of 3 Asian Countries

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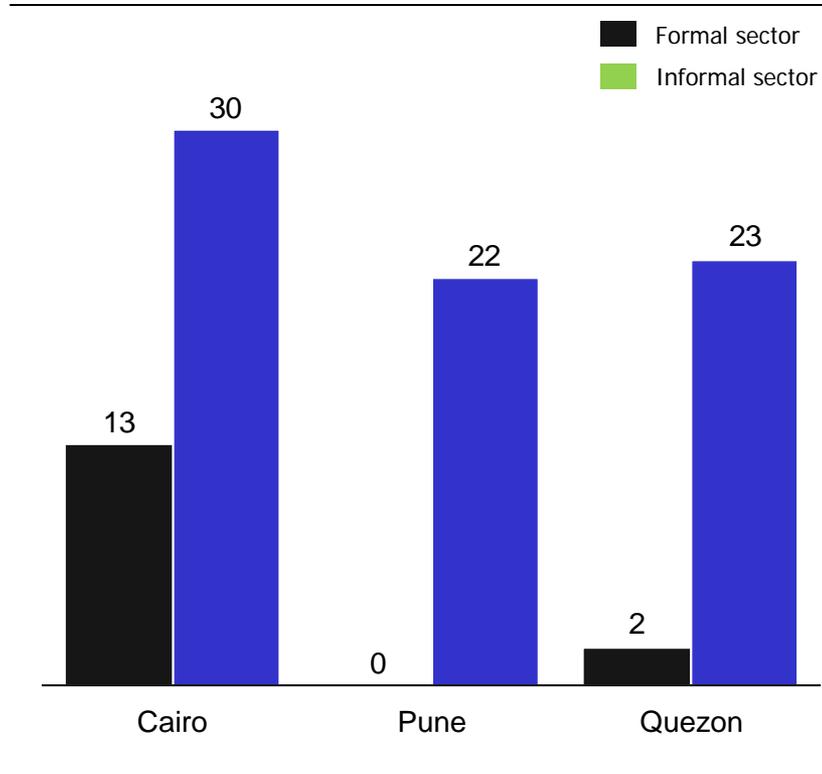
Status of the Informal Recycling Waste Sector

- Around 1% of urban population of developing countries into informal sector waste management activities – above 15 million + people across globe
- In lower-income countries, the informal sector is often achieving recycling rates of 20 to 30% for MSW at no cost to municipalities.
- The GIZ/CWG findings corroborate what *Solid Waste Management in the World's Cities* contends: “...recycling rates of inorganic material are already competitive with what is being achieved by modern Western systems” (UN Habitat 2010: 207). *At a far lower cost than formal waste collection*
- Some cities in developing countries such as Bengaluru (28%) and Delhi (34%) in India compare well with developed country cities such as Rotterdam (30%), while Bamako, Mali stands out with a recycling rate of 85 per cent. (UN Habitat 2010).
- The informal sector (and households) are highly efficient at sorting and collecting waste when there is value in the waste
- But often ignored and despised because of lack of working conditions and organizational capacity.

The informal recycling market is highly efficient at collecting 'high' value waste

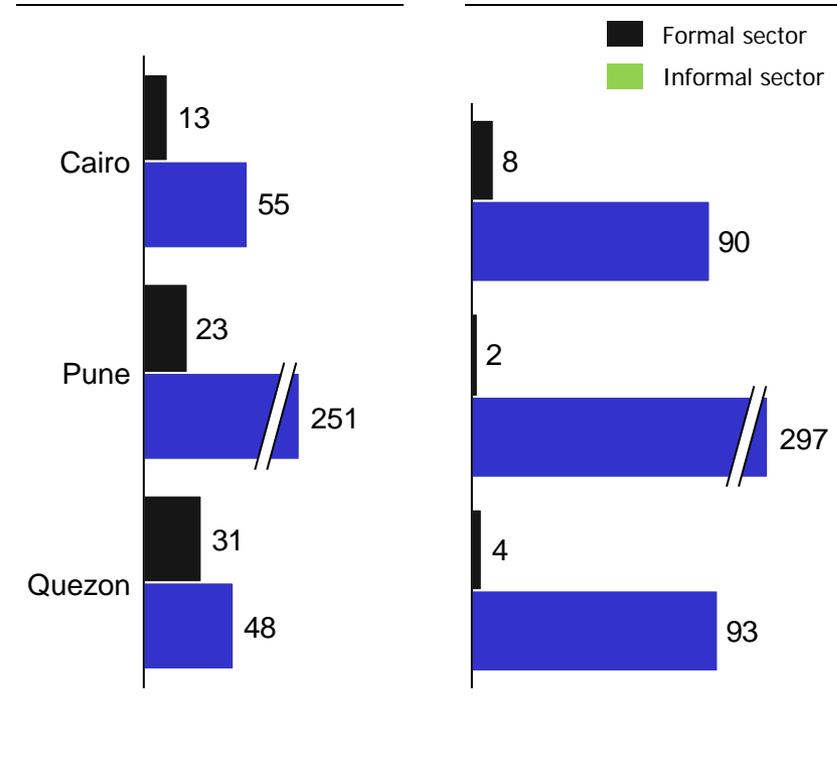
Informal waste workers are more efficient at finding value in waste for recycling than MSW services

Waste recovery of total waste generated
%, 2006-07

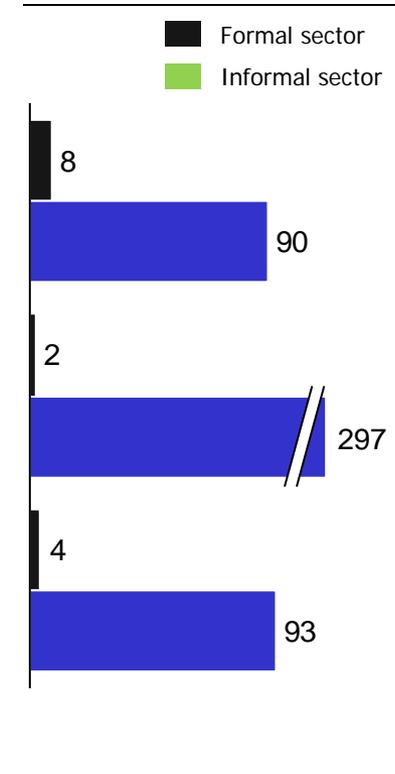


Informal sector cost 3-5x more per tonne than MSW services but generate 20-25x more revenue

Cost per ton collected
€, 2006-07



Revenue from materials collected, €, 2006-07



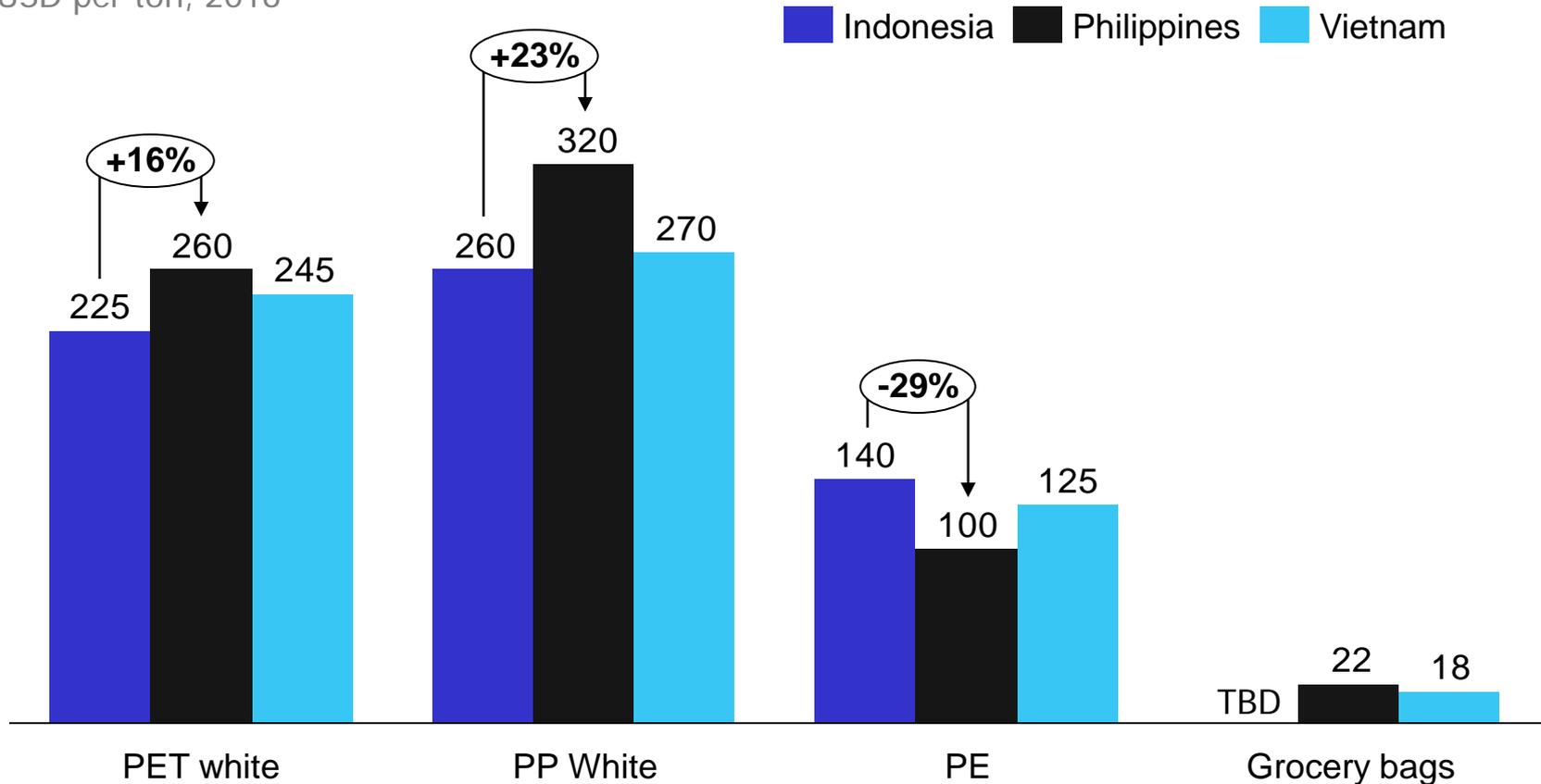
1 Based on modeling of average estimated recovered waste with scavenger integration in 6 cities; Cairo, Cluj, Lima, Lusaka, Pune and Quezon

SOURCE: The economics of the informal sector in solid waste management, Sheinberg et al, GTZ and CWG (2011)

The value of waste-picker-collected 'high value' plastic waste varies ~20% by country

Average price paid for 'high value' plastics to informal waste pickers by small junk shops

USD per ton, 2016

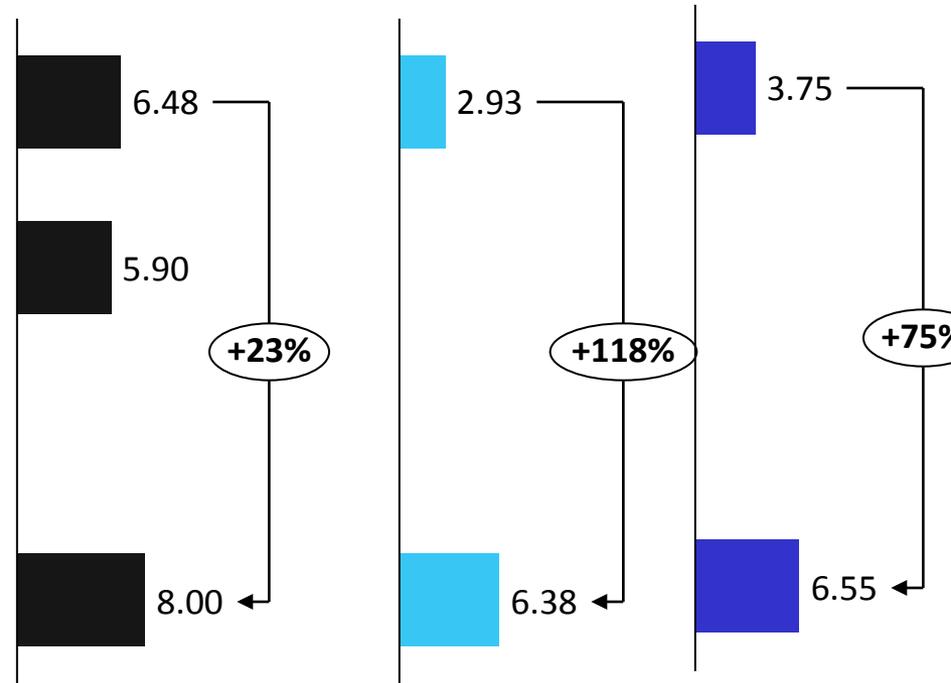
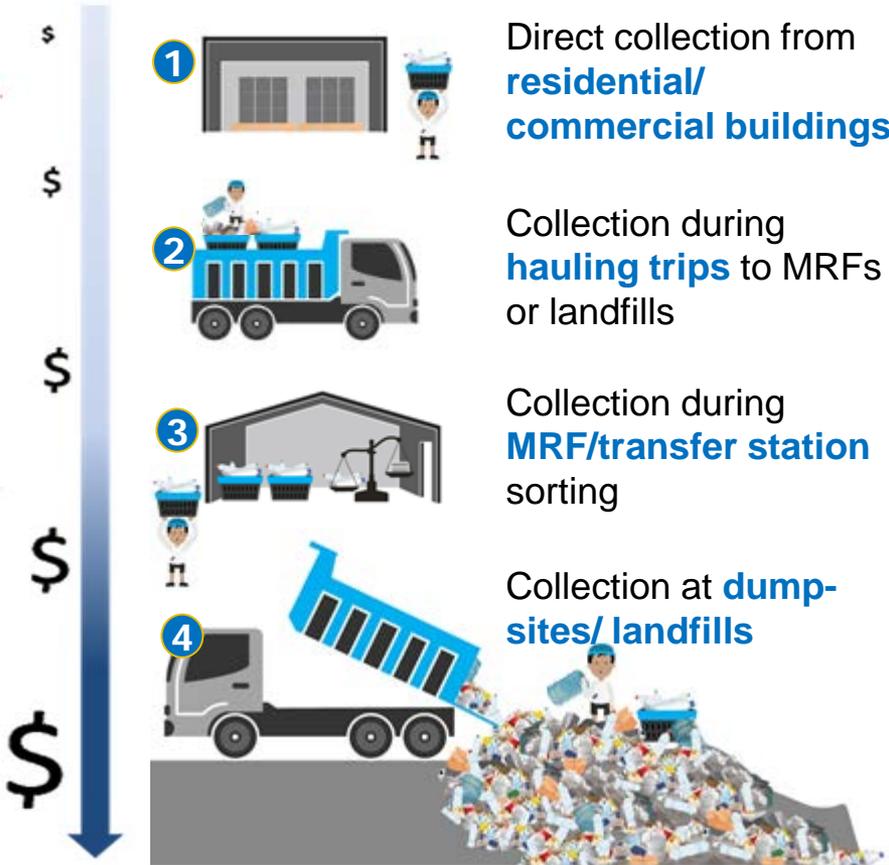


Source: Team landscape analysis survey

There are four types of waste pickers, with earnings highest, at higher waste consolidation locations

Average daily wage picker earnings
USD per day, 2016

Philippines
Vietnam
Indonesia



Not all waste picker roles are present in all countries, e.g., Vietnam does not have hauler truck waste pickers

Their earnings also increase 30-50% when they have access to non-motorized vehicles to haul waste

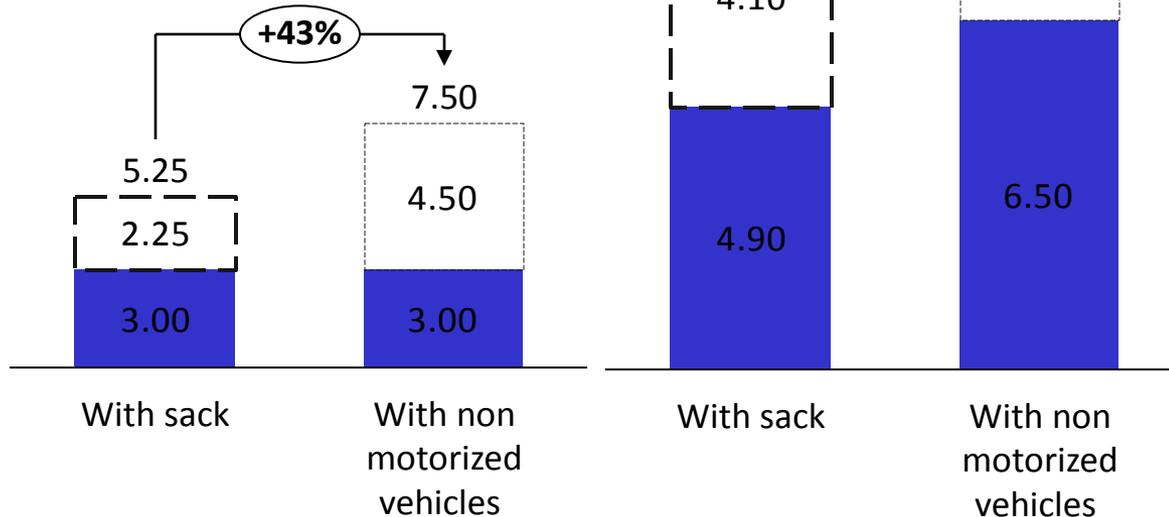
Comparison of daily waste picker earnings in **Indonesia** with and without non-motorized vehicles, USD per day, 2016

Non-motorized vehicle uplift by country, % difference, 2016

Street collection



Landfill collection



Street collection

Indonesia	43
Philippines	34
Vietnam	150

Landfill collection

Indonesia	11
Philippines	21
Vietnam	33

Conclusion

- Build improved waste management system with inclusion of informal sector waste workers
- Develop credible data bank of informal sector workers to properly understand their contribution
- Recognize and legitimize their work – build on the existing system – do not dismantle it
- Partner with the formal sector
- Train them to provide both waste management services and in recycling and processing
- Potential to improve recycling for another 15-25% through the above measures