Overview of plastic waste flows in Mozambique

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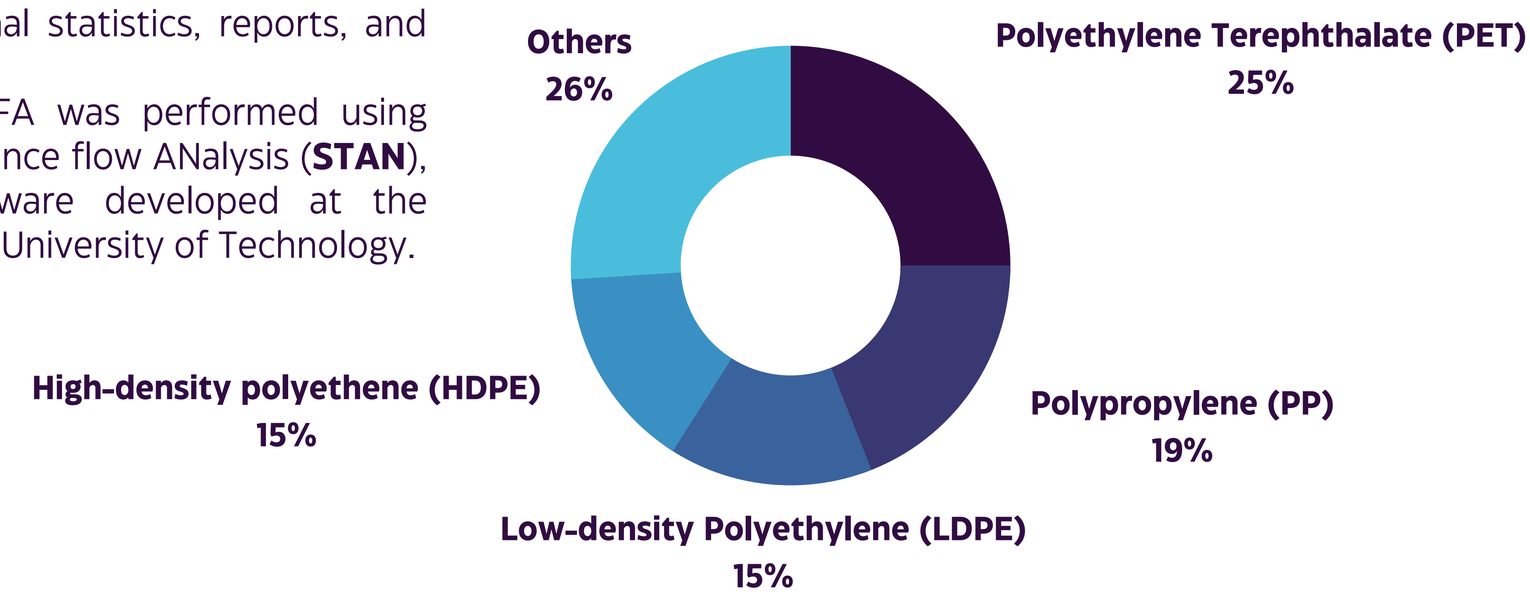
INTRODUCTION AND OBJECTIVE

Mozambique is a low-income Southern African country. Managing solid waste is challenging, with low recycling rates and reliance on open burning and dumping. Plastic waste (PW) generation is on the rise, mostly mismanaged, with around 2,544 tons emitted into the ocean [1, 2]. If the current solid waste management practices remain, by 2025, over 280,000 tons of PW will be mismanaged, making Mozambique one of the top African polluters [3]. This study aims to estimate the 2020 PW flows and stocks in Mozambique through a Material Flow Analysis (MFA).

METHODOLOGY

The **data** was collected via interviews and retrieved from available international statistics and databases, national statistics, reports, and relevant literature.

The MFA was performed using SubSTance flow ANalysis (**STAN**), a freeware developed at the Vienna University of Technology.

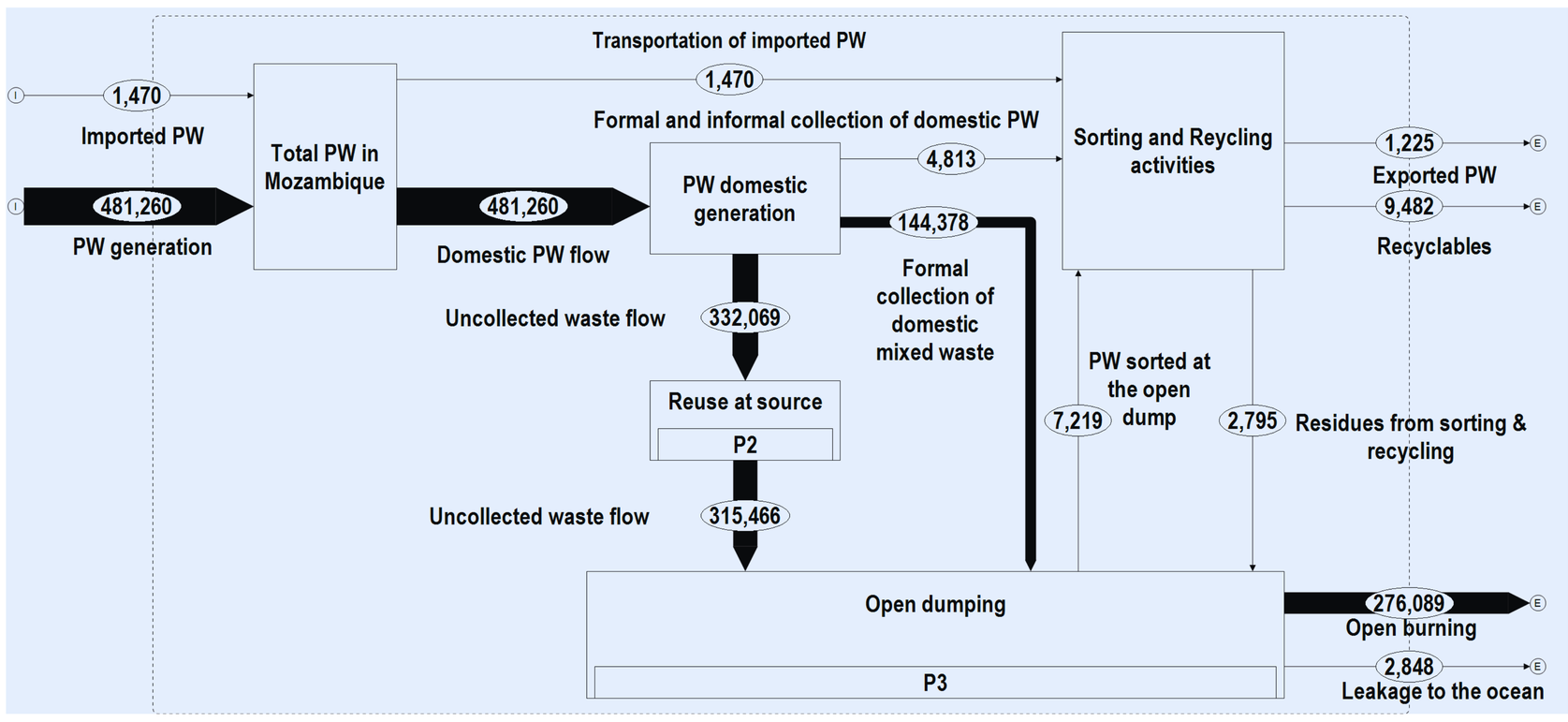


RESULTS

In Mozambique, there are two primary **sources of PW**:

- Domestic generation of about 15.4 kg per capita per year, and, Imports.

After PW enters the system, formal and informal **collection** (31%) occurs by the local authorities, private service providers, or informal workers. A significant amount remains **uncollected** (69%) and is buried , (open) dumped, and burned.



2020 plastic waste flows and stocks in Mozambique

ANALYSIS

Of the total PW in the waste management system, there is a **potential to introduce sorting activities at the source** coupled with **selective collection**. It can then foster increased reuse practices and enterprise interest in recycling.

Information on PW sorting and recycling activities **needs to be more organized and documented**, particularly the role and impact of the informal sector, which intervenes throughout the system from generation to final disposal stages.

Over 95% of PW end up in open dumps, with about **60% open burned and less than 0.5% recovered** and prepared for recycling or exports, representing a significant adverse environmental and human health hotspot.

CONCLUSION

This study clarified the PW flows and stocks in Mozambique, and key recommendations include:

- Develop local sorting and recycling markets by investing in a separate waste collection system; acknowledging the informal sector; providing incentives for enterprises; introducing awareness-raise programs for waste sorting at source.
- Move to eradicate and mitigate the environmental and health risks from ongoing PW dumping and open burning.

RELATED LITERATURE

[1] L. J. J. Meijer, T. van Emmerik, R. van der Ent, C. Schmidt, and L. Lebreton, "More than 1000 rivers account for 80% of global riverine plastic emissions into the ocean," Science Advances, vol. 7, no. 18, pp. 1–14, 2021, doi: 10.1126/sciadv.aaz5803.

[2] Richa Singh, Minakshi Solanki and Siddharth Singh, Plastic Waste Management in Africa - An Overview, 2023, Centre for Science and Environment, New Delhi, India

[3] Jambeck, Jenna R., Roland Geyer, Chris Wilcox, Theodore R. Siegler, Miriam Perryman, Anthony Andrady, Ramani Narayan, and Kara Lavender Law. "Plastic Waste Inputs from Land into the Ocean." Science 347, no. 6223 (February 13, 2015): 768–71. https://doi.org/10.1126/science.1260352.

[4] UICN-EA-QUANTIS, "National guidance for plastic pollution hotspotting and shaping action, Results of Mozambique (in Portuguese)." 2020.

ACKNOWLEDGEMENTS

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