

# The Value Chain of Plastic Bottles in Norway and South Africa

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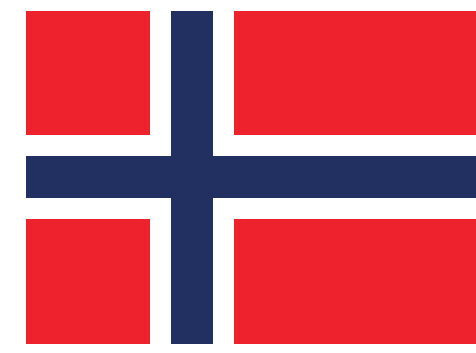
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## Plastic bottles

- Durable, versatile, and cost-effective
- Used in packaging, construction, automotive, and healthcare.
- Analyzing the number of plastic bottles, from production to disposal is relevant to identify key areas for intervention and to develop sustainable strategies.



- 59.39 million people
- Common polymer types used for manufacturing include PE, PP, and PET
- High Plastic Pollution
- Informal Recycling Sector
- Extended Producer Responsibility (EPR)

- 5.4 million people
- Reducing Single-Use Plastics
- Norwegian Plastics Strategy Recycling = 50% of plastic packaging by 2025 and 55% by 2030
- One of the most waste-generating countries per capita in Europe

## Methodology

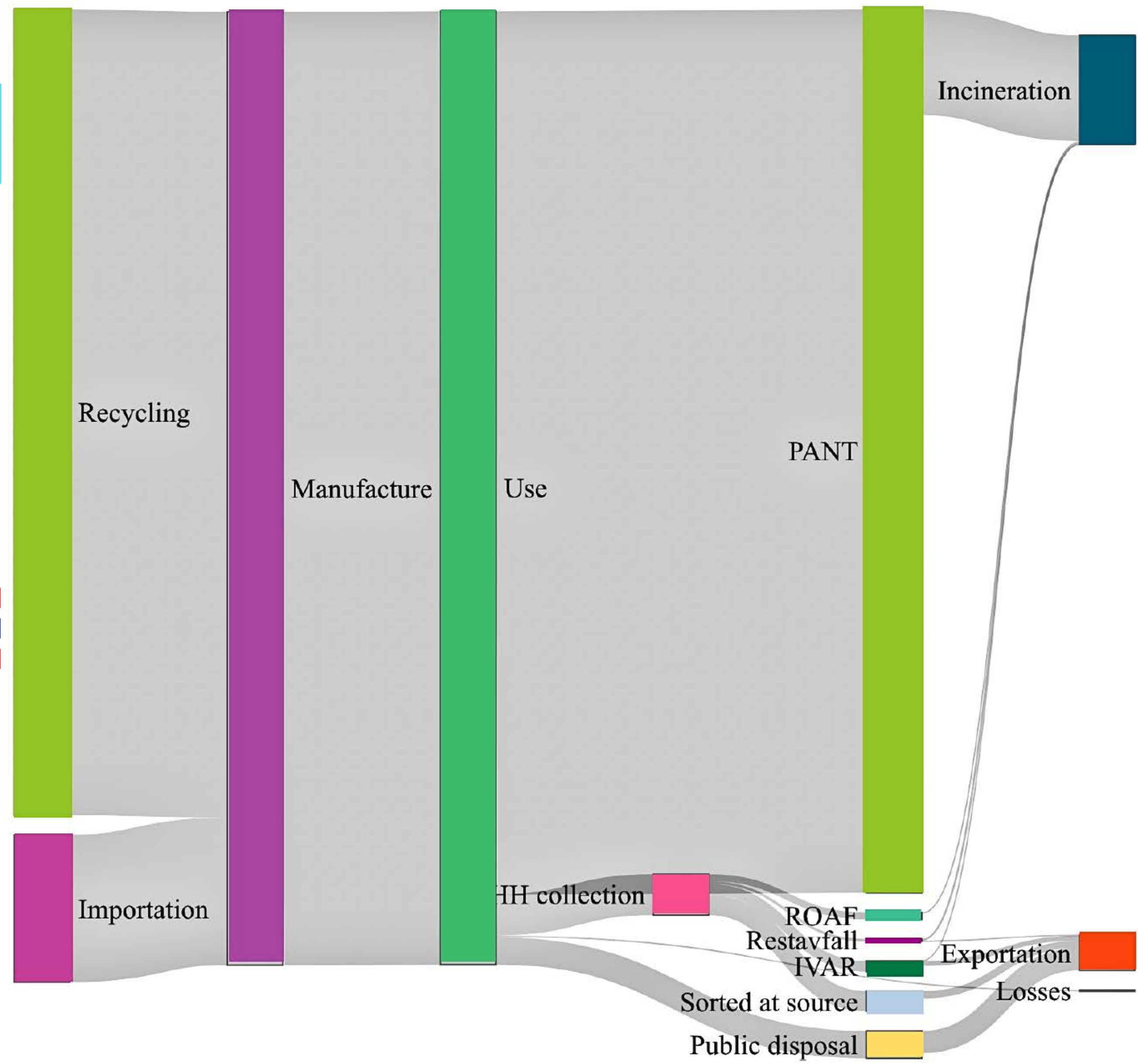
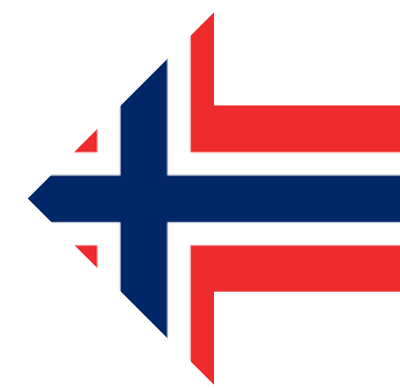
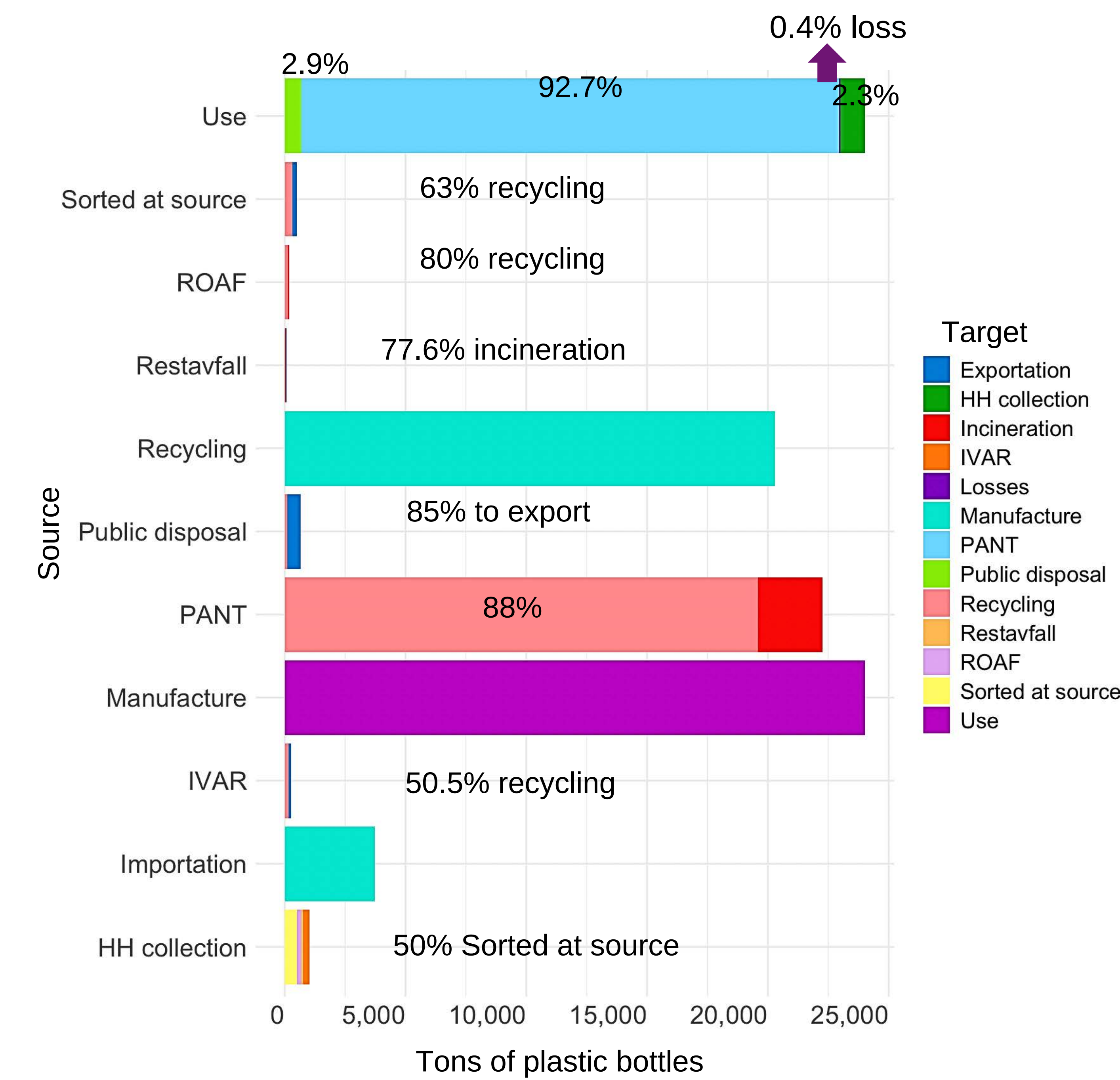


Plastic bottles consumption and generation patterns

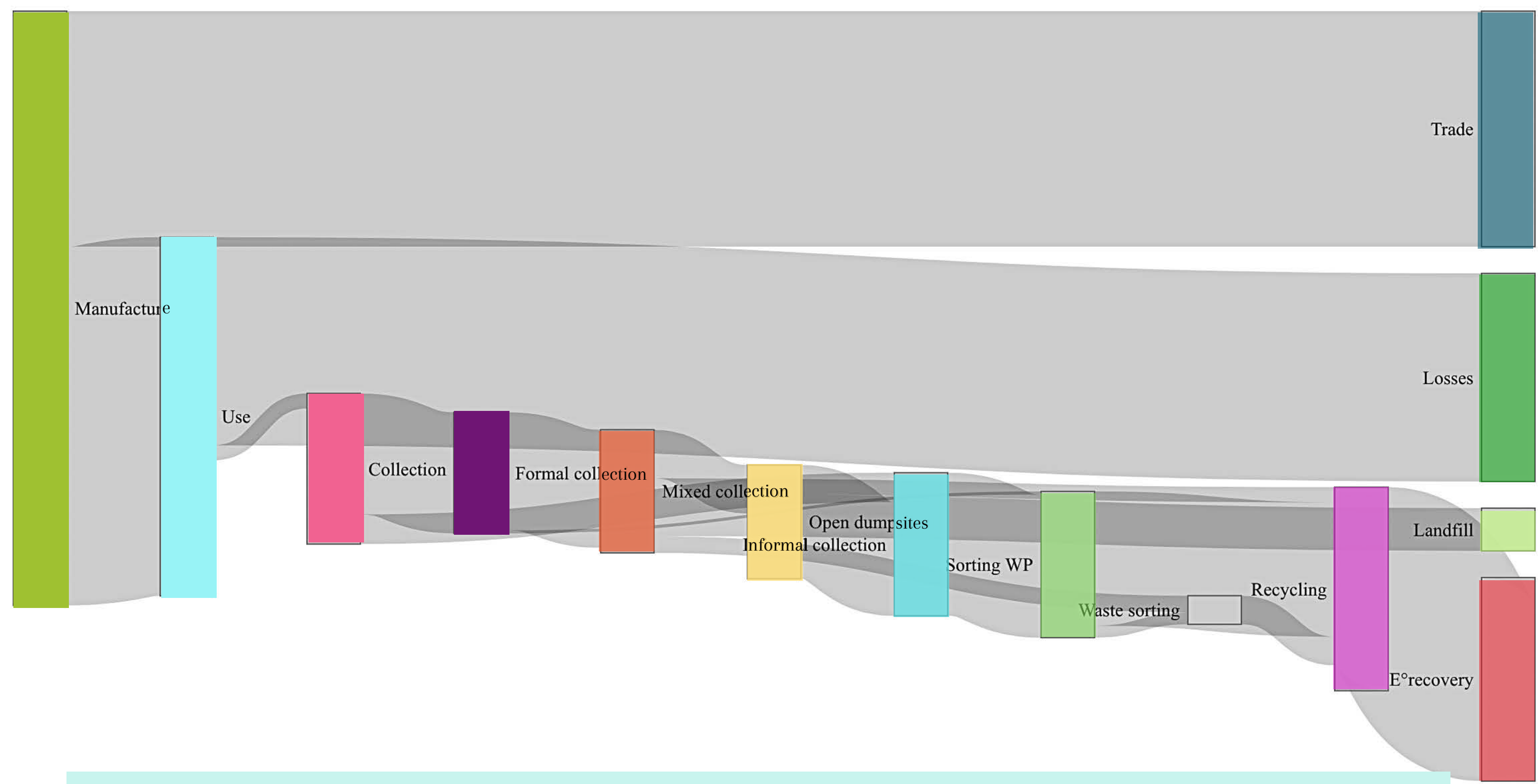
- System boundaries to produce plastic bottles in both countries
- Stakeholder mapping

Primary data: Research studies, reports, and policies  
Secondary data: Interviews

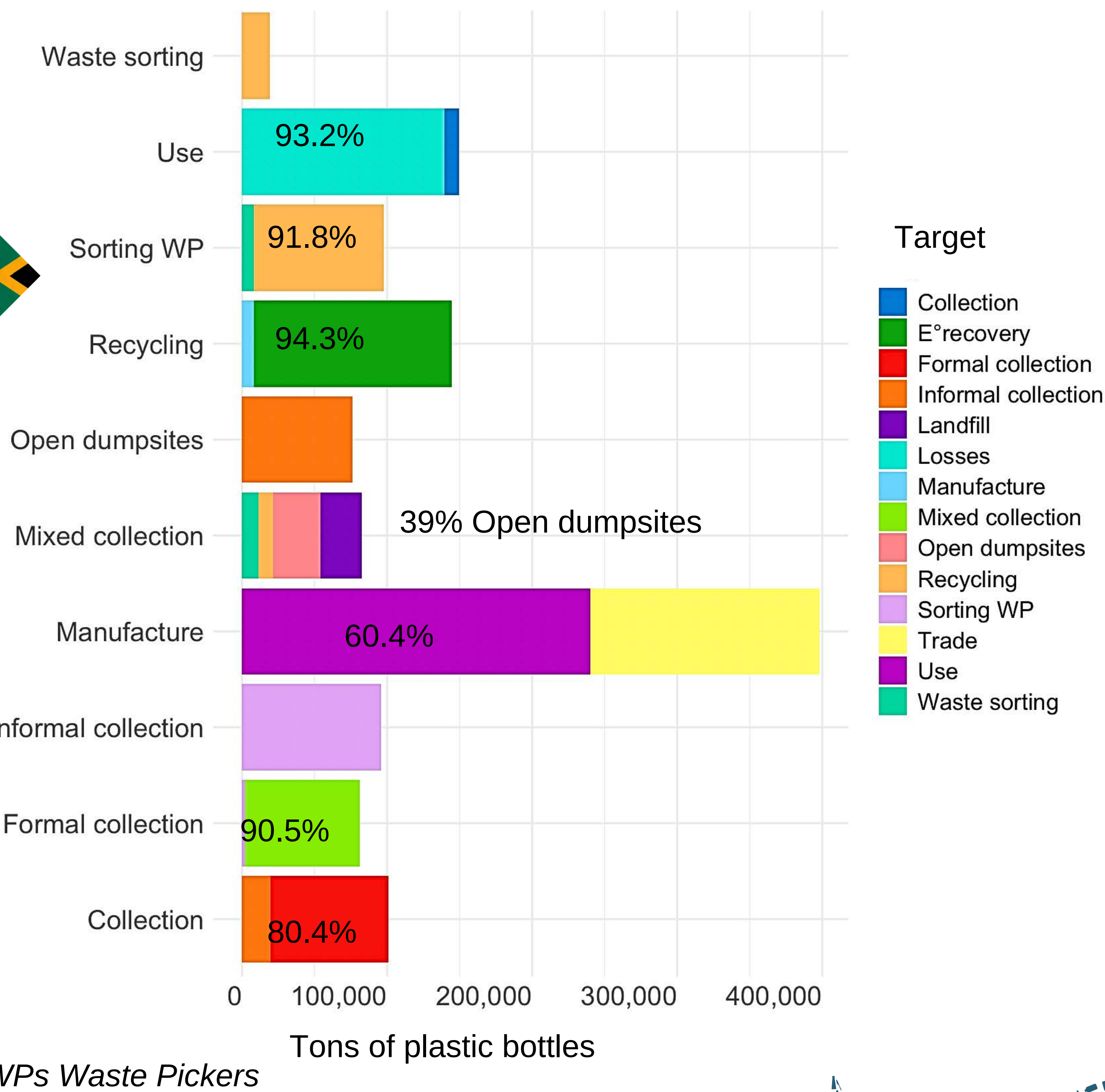
Material Flow Analysis STAN software



- High Plastic Recycling Rate: PET bottles are separately collected in Norway.
- PANT recycles 81% of the plastic bottles generated.
- 16 % of the plastic bottles generated are incinerated.
- The demand for recycled PET (rPET) is higher than its supply.
- 0.15 % of plastic bottles are discarded and go to the environment.
- 0.004 tons of plastic bottles consumed per person in one year = 139 plastic bottle



Source



\*WPs Waste Pickers

- 58 % of plastic bottles consumed are not collected
- 49.7% of plastic bottles generated are recycled by the formal and informal sectors. 37 % is recovered by the informal sector.
- 28 % and 32 % of plastic bottles collected go to landfill and Open dumpsites, respectively.
- 0.004 tons of plastic bottles consumed per person in one year = 126 plastic bottles



## Key learnings

- Material origins and destinations of Plastic bottles were successfully identified.
- A comprehensive analysis of waste generation patterns was conducted.
- The study revealed inadequacies and inefficiencies in plastic bottle management processes.
- The utilization of the MFA model enabled the quantification of plastic bottle ingress into the environment, supported by robust scientific evidence.
- Emphasis should be placed on reducing plastic bottle consumption in both nations, highlighting the significance of concerted efforts.
- Future studies should include the assessment of plastic bottle trends within different scenarios.