National Plastic Action Partnership (NPAP) in Pakistan

Policy Brief - District Hyderabad

Introduction

Pakistan generates tens of millions of tons of plastic waste annually, the majority of which remains uncollected. As the second-largest urban centre in Sindh, Hyderabad reflects the growing complexity of this challenge. Rapid urbanization, combined with a fragmented waste management system, has led to increasing volumes of unmanaged waste. Its proximity to the Indus River makes it a critical leakage point, with national data indicating that over 103 kilotons of plastic entering aquatic ecosystems annually, much of it through urban drainage.

The National Plastic Action Partnership (NPAP) in Pakistan, led by United Nations Development Programme (UNDP) as Secretariat under the World Economic Forum's Global Plastic Action Partnership (GPAP), targets a 75 percent reduction in mismanaged plastic waste by 2040. However, progress in Hyderabad is constrained by reliance on the informal "Kabarwala" network, which efficiently recovers high-value PET (polyethylene terephthalate) but leaves low-value plastics, such as multi-layered plastics (MLP) and flexible packaging, uncollected, often resulting in dumping or open burning. This contributes to the 1,561 kilotons of waste burned annually in Pakistan, releasing toxic pollutants and worsening air quality and public health.

Specialized Medium-, small-, and micro-sized enterprises (MSMEs) and contractors such as ALTAS Pak are central to transitioning toward a circular economy. Operating a polyethylene (PE)

~90% of high-value PET waste in Hyderabad is recovered by the **informal sector**

Low-value MLPs are, however, left for dumping or open burning.

recycling facility in Hyderabad, ALTAS Pak bridges informal collection with industrial-scale recovery, particularly for previously neglected plastic streams. However, its effectiveness is limited by the lack of source segregation and traceable data systems, restricting its ability to meet Extended Producer Responsibility (EPR) requirements and access plastic credit mechanisms. This transition is critical to making plastic recovery financially viable in a region where economic margins for recycling low-value plastics are otherwise non-existent.

Multi-stakeholder consultations under NPAP Pakistan in Hyderabad, held in March 2026, brought together government parties, municipal authorities, private sector, informal waste workers, civil society, MSMEs, youth groups and academia to identify systemic gaps, strengthen institutional linkages, and generate actionable policy insights. These further highlighted key challenges, including weak institutional coordination, lack of household-

level segregation such as a three-bin system, and the marginalization of informal waste workers, many of whom are women and children operating without legal protection, safety measures, or fair compensation. The integration of these workers into a formalized system, supported by contractors like ALTAS and overseen by the Sindh Solid Waste Management Board (SSWMB) and the Sindh Environmental Protection Agency (EPA), is a moral and operational necessity. The failure of current policy to provide tax incentives for post-consumer recycled (PCR) products further discourages private investment, leaving the burden of waste management on a few key players. By mobilizing the academic rigor of institutions like the University of Sindh Jamshoro and aligning it with the industrial capacity of MSMEs, Hyderabad can pioneer a model of "circular stewardship." This policy brief details the specific gaps identified during field work and multi-stakeholder consultations, and proposes an actionable matrix to catalyse this transformation.

06 days of NPAP consultations

250+ stakeholders engaged

Informal waste workers in HYD at NPAP workshop

Circularity Gaps and Challenges in Hyderabad

NPAP Pakistan's multi-stakeholder consultations highlighted structural inefficiencies across governance, market systems and operations that continue to limit circularity in Hyderabad. Key barriers are as follows:

Stakeholder Group	Key Gaps and Challenges
Medium-, small-, and micro-sized enterprises (MSMEs)	• Limited awareness and capacity for EPR and plastic credit systems • Absence of standardized digital tracking and reporting systems • Reliance on manual reporting, limiting transparency and compliance • High costs for machinery, certification and compliance • Inconsistent supply of source-segregated materials • Inefficient logistics and absence of organized collection systems • Price volatility of recycled vs virgin plastics
Academia and Innovation Ecosystem	• Limited access to real-time industrial and municipal waste data • Weak linkages between research institutions and industry • No formal platform to connect student innovations with MSMEs • High economic barriers to scale student-led solutions commercially • Insufficient funding for research and pilot projects • Lack of dedicated institutional focus on circularity
Government and District Authorities	• Fragmented governance and overlapping jurisdictions between Sindh EPA, SSWMB and district administration • Limited district-level data on waste generation and leakage hotspots • Weak enforcement and alignment between national policies and local implementation • Low technical capacity on circular economy implementation • Insufficient infrastructure, including lack of Material Recovery Facilities (MRFs)

Stakeholder Group	Key Gaps and Challenges
 **Businesses and Industry**	• Lack of market incentives, such as EPR, for using recycled (PCR) materials • Cross-border leakage and informal trade disrupting formal recovery markets • Limited alignment with local systems for sourcing and recycling plastics
 **Informal Waste Workers**	• Legal and institutional exclusion from formal waste management systems • Lack of recognition, protection and integration into value chains • Unsafe working conditions, and limited access to Personal Protective Equipment (PPE) and health services • Social marginalization and gender-based vulnerabilities • Exploitation by middlemen due to lack of direct market linkages • Gender-specific safety and mobility challenges in the field
 **Communities**	• High waste contamination due to poor household-level segregation • Low public awareness and behavioural resistance toward segregation • Limited community engagement in recycling and waste reduction

Context and Importance of the Problem

The plastic pollution crisis in Hyderabad is driven by interconnected systemic bottlenecks:

1. Institutional Coordination Gaps

Overlapping or unclear roles between the Sindh EPA, SSWMB, and district administration lead to service delivery failures.

2. Data Invisibility

A lack of verifiable, digitized data on recovered waste prevents local MSMEs from accessing global Plastic Credit markets and fulfilling EPR requirements.

3. Research-Industry Disconnect

Academic institutions like the University of Sindh, Jamshoro, show strong potential in innovations like bioremediation and research-driven recycling, but lack formal data-sharing channels and funding to scale these solutions.

4. Informal Sector Vulnerability

The grassroots workforce, particularly women, operates without health and safety standards, facing significant wage gaps and social exclusion.

The bottleneck is integration: between policy and practice, data and decisions, and waste and value recovery.


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Policy Recommendations

The NPAP multi-stakeholder consultations call for a transition to a **data-driven, inclusive circular economy**, centred on:

- Formalizing the informal “Kabarwala” network into regulated cooperatives
- Formalize and integrate informal waste workers into the system
- Strengthening academia–MSME partnerships to scale local innovations
- Aligning provincial and district governance for effective enforcement
- Driving behavioural change through education and source segregation
- Ensuring gender-responsive systems across the waste value chain

Together, these actions aim to shift Hyderabad from an informal, fragmented waste system to a structured circular value chain.

Implementation Roadmap

Recommendation	Pathway	Key Actions	Actors Responsible	Estimated Timeline
Formalize informal sector	Transition waste pickers into regulated cooperatives	ID cards, PPE, health insurance, social security, direct linkages with MSMEs (e.g ALTAS Pak)	District Admin, SSWMB, Labour Dept, MSMEs	6-12 months
Digitization & Financial Stewardship	Adopt IoT-enabled recovery tracking for EPR & Plastic Credits	Install digital tracking systems; register with certification bodies	Sindh EPA, MSMEs, NPAP Secretariat	12-18 months
Academia–Industry Linkages	Establish university focal points to align research with industry needs	Pilot projects (bioremediation, PCR); “Lab-to-Market” grants	University of Sindh, Higher Education Dept, MSMEs	~12 months
Regulatory and Economic Incentives	Improve market viability of recycled materials through fiscal policy	Tax credits (>30% PCR); curb smuggling and illegal dumping	Sindh Govt, FBR, Sindh EPA, District Admin	18-24 months

Recommendation	Pathway	Key Actions	Actors Responsible	Estimated Timeline
Behavioural Change and Source Segregation	Reduce contamination at source through awareness	Curriculum integration; “Three-Bin” pilot rollout	Education Dept, SSWMB, MSMEs, NGOs	Immediate/ ongoing
Gender-Responsive Systems	Improve safety and inclusion of female workers	Inclusive policies, PPE, sanitation facilities	MSMEs, Sindh EPA, Social Welfare Dept	Immediate/ 6 months

Conclusion

Achieving a sustainable and inclusive circular economy in Hyderabad requires coordinated action across systems, sectors, and stakeholders. Key priorities include formalizing and integrating the informal waste sector through regulated cooperatives, enabling digital traceability across the plastic value chain to strengthen EPR and plastic credit compliance, and building structured linkages between academia and industry to scale local innovation. Equally critical is the development of gender-responsive infrastructure to ensure safety and dignity for women workers across the waste system, alongside embedding environmental stewardship and circular economy principles into education systems to drive long-term behavioural change toward source segregation and responsible consumption.

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