

National Plastic Action Partnership (NPAP) in Pakistan

Policy Brief - District Peshawar

Introduction

Plastic pollution has emerged as a critical environmental and development challenge in Pakistan, with far-reaching implications for public health, ecosystem integrity, and economic sustainability. In Khyber Pakhtunkhwa (KP), the issue is further intensified by rapid urbanization, population growth exceeding 35 million, and limited municipal capacity for efficient waste collection, segregation, and recycling. As a result, a substantial volume of plastic waste leaks into the environment, exacerbating health risks and environmental degradation.

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), provides a comprehensive framework to address plastic pollution through a full lifecycle approach covering production, consumption, collection, recycling, and environmentally sound disposal. Grounded in circular economy principles, NPAP emphasizes multi-stakeholder collaboration, private sector engagement, and inclusive governance to transition from a linear “take-make-dispose” model to a regenerative system. To operationalize NPAP objectives at the sub-national level, targeted capacity-building initiatives were conducted in Peshawar, engaging government departments, municipal authorities, medium-, small-, and micro-sized enterprises (MSMEs), academia, civil society, informal waste workers, youth groups, and development partners. These engagements helped bridge policy and practice by strengthening

institutional linkages and co-developing locally grounded solutions.

06 days of NPAP consultations

200+ stakeholders engaged



The consultations used participatory methods such as Focus Group Discussions (FGDs), value chain mapping, and panel discussions, enabling stakeholders to identify systemic gaps and develop actionable strategies. Strong emphasis was placed on gender inclusion, occupational health and safety, and integration of informal waste workers, who form a critical yet vulnerable part of the recycling value chain. Field evidence highlighted that women waste workers face disproportionate challenges, including unsafe working conditions, lack of sanitation facilities, and limited participation in decision-making processes. Key findings indicate that while policy frameworks exist, implementation gaps persist, driven by weak institutional coordination, inadequate segregation and recycling infrastructure, limited enforcement of Extended Producer Responsibility (EPR), and socio-

economic inequalities.

Addressing these challenges requires a shift from fragmented, project-based interventions to integrated, system-level reforms aligning policy, infrastructure, financing, and social inclusion. Strengthening plastic circularity in KP will reduce environmental leakage, unlock economic opportunities for MSMEs, and improve livelihoods across the value chain. This policy brief synthesizes field insights and stakeholder perspectives into evidence-based, actionable recommendations, aimed at informing national and sub-national level

policymakers, regulatory authorities, development partners, and private sector actors, and providing a clear pathway for advancing plastic circularity and inclusive waste management systems in Pakistan.



Circularity Gaps and Challenges in Peshawar

NPAP Pakistan’s multi-stakeholder consultations identified a pervasive set of systemic, institutional and operational barriers that hinder the effective transition to a circular economy in Peshawar. Key challenges are as follows:

Stakeholder Group



Medium-, small-, and micro-sized enterprises (MSMEs)

- Limited access to finance, incubation and innovation scaling support
- Low awareness and preparedness for EPR and plastic credit systems
- Weak data systems and traceability across the value chain
- Limited technical capacity and training on circular business models
- Poor market access for recycled products and weak corporate linkages
- Absence of Material Recovery Facilities (MRFs) and reliance on poorly segregated waste

Key Gaps and Challenges



Academia and Innovation Ecosystem

- Lack of province-level plastic flow mapping and waste composition data
- Weak research–industry–government linkages limiting implementation
- Absence of longitudinal research on microplastics and health impacts
- Limited environmental health surveillance systems
- Lack of pilot-scale, research-driven interventions
- Insufficient translation of research into policy and practice



Government and District Authorities

- Fragmented coordination across federal, provincial, and local levels
- Weak enforcement of environmental regulations and unclear mandates
- Limited integration of circular economy principles into development planning
- Inefficient municipal waste collection and segregation systems
- Absence of structured EPR mechanisms and weak compliance systems
- Lack of investment-ready policy frameworks
- Limited adoption of modern waste management technologies

Stakeholder Group



Businesses and Industry

- Weak engagement in EPR systems and circular practices
- Limited investment in recycling infrastructure and innovation
- Gaps in transparency, traceability, and trust in plastic credit systems
- Weak linkages with MSMEs for sourcing recycled materials



Informal Waste Workers

- Heavy reliance on informal sector without recognition, protection or integration in formal waste management systems
- Unsafe working conditions and lack of Personal Protective Equipment (PPE)
- Gender-specific safety and hygiene constraints for women workers
- Social marginalization and dignity challenges



Communities

- Lack of systematic source segregation practices
- Low awareness and behavioural resistance to waste management practices
- Weak coordination with municipal systems and recycling actors
- Inefficient local waste systems leading to environmental leakage

Context and Importance of the Problem

The plastic pollution crisis in Peshawar is driven by the following systemic bottlenecks:

1. Fragmented Systems

The plastic waste management system is highly fragmented and inefficient, with limited coordination among stakeholders.

2. Informal Sector Dependence

Informal waste workers form the backbone of the recovery system, accounting for the majority of waste collection in Peshawar, yet remain marginalized and vulnerable.

3. Gender Inequality

Gender inequality is a critical but under-addressed issue within the plastic value chain as disparities in safety, wages and participation persist across the value chain.

4. Barriers for MSMEs

MSMEs have strong potential to drive circular solutions but face systemic barriers to growth and formalization.

5. Implementation Gaps







There is a significant gap between policy intent and ground-level implementation, largely due to weak enforcement and lack of institutional alignment.

Waste systems in Peshawar are active but ineffective, with critical gaps in coordination, inclusion and enforcement.



Policy Recommendations

The policy recommendations aim to strengthen plastic waste management in Peshawar through a **coordinated, data-driven, and inclusive approach** aligned with NPAP objectives:

-  Strengthen waste segregation at source through mandatory systems and awareness
-  Deploying IoT-enabled tracking systems for EPR and Plastic Credit compliance
-  Invest in recycling infrastructure, including Material Recovery Facilities (MRFs)
-  Operationalize incentive schemes like Extended Producer Responsibility (EPR)
-  Enable MSMEs and innovation through finance, training and market linkages
-  Promote gender-responsive waste management systems

The effectiveness of these recommendations will depend on coordinated execution across policy, markets and communities.

Implementation Roadmap

| Recommendation | Pathway | Key Actions | Actors Responsible | Estimated Timeline |
|---|---|---|---|--------------------|
| Strengthen Waste Segregation at Source | Introduce mandatory segregation and awareness | Enforce municipal rules, develop local bylaws, pilot and scale models | Municipal Authorities, EPA, Local Governments, NGOs | 6-24 months |
| Formal Integration of Informal Workers | Recognize and Protect | Amend labour/social protection frameworks, registration, ID cards, PPE, social security | Municipal Authorities, Labor Dept., NGOs, CBOs | 6-12 months |
| Enhance Recycling Infrastructure | Invest in MRFS and recycling systems | Align with environmental regulations, introduce PPP frameworks and incentives | Government, Private Sector, Development Partners | 1-3 years |
| Strengthen EPR Systems | Enforce producer responsibility | Develop provincial EPR rules, compliance systems, digital tracking | EPA, Ministry of Climate Change, Industry | 1-3 years |

| Recommendation | Pathway | Key Actions | Actors Responsible | Estimated Timeline |
|----------------------------------|--|--|--|--------------------|
| Promote MSME Engagement | Enable through finance and capacity building | Subsidies, green financing, EPR-linked market access | SMEDA*, Private Sector, NGOs, Financial Institutions | 6-24 months |
| Gender-Responsive Systems | Ensure inclusion and safety measures | Gender safeguards in labour laws, workplace standards (sanitation, GRM, equal pay) | Government, NGOs, Private Sector | 6-12 months |

*Small and Medium Enterprises Development Authority

Conclusion

The findings from Peshawar show that plastic pollution is not just a waste management issue, but a systemic governance, economic and social challenge requiring coordinated, cross-sectoral action. A shift toward a circular plastics economy in Khyber Pakhtunkhwa will require enforcing regulations, prioritizing high-impact interventions, and strengthening collaboration between government, private sector, academia, and communities. Formalizing the informal sector,

investing in infrastructure, and embedding gender-responsive approaches are central to building an equitable and efficient system. If implemented effectively, these actions can reduce plastic leakage, improve resource efficiency and unlock economic opportunities for MSMEs, while transforming the current fragmented system into a resilient, data-driven and inclusive circular economy.



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