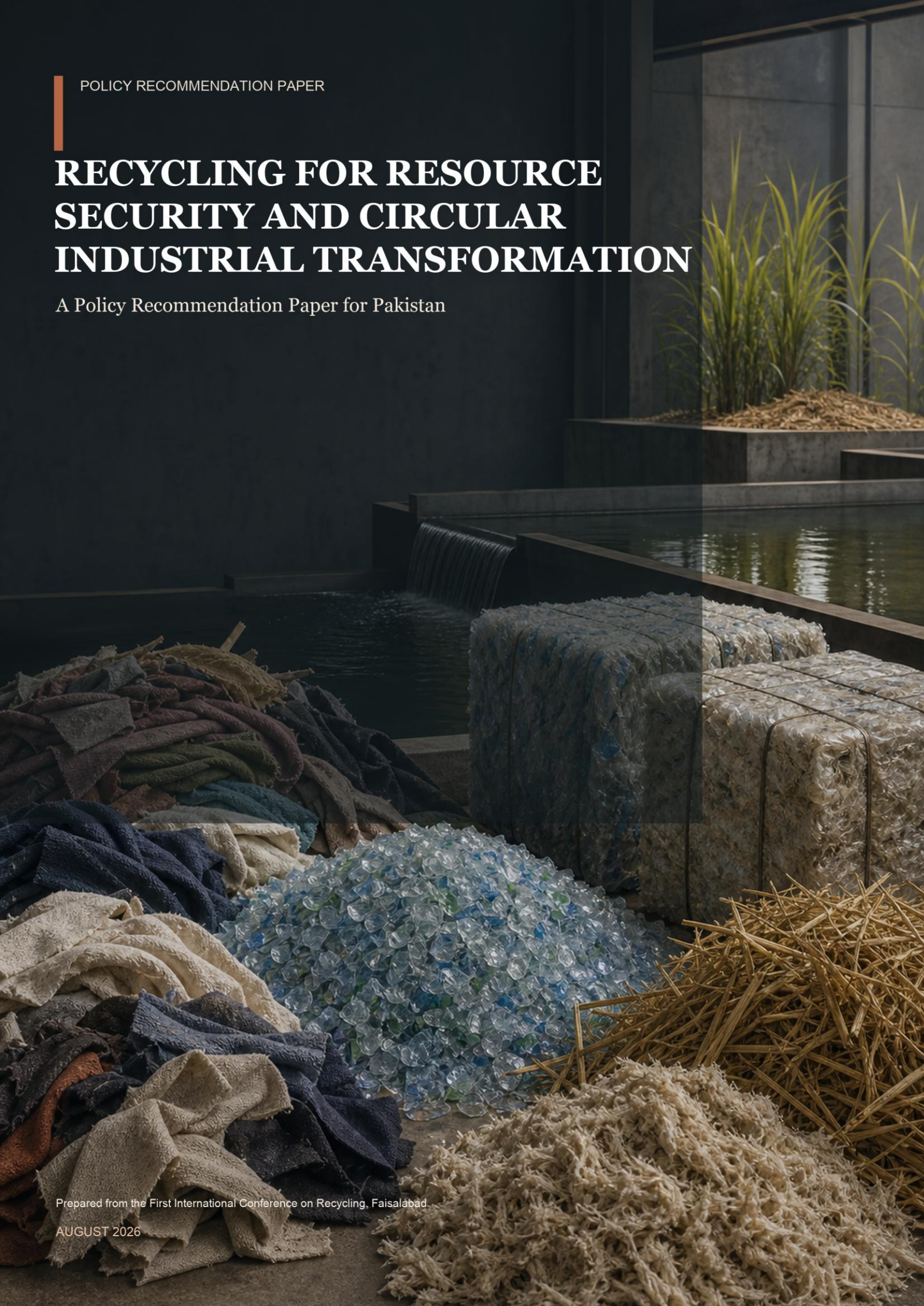
POLICY RECOMMENDATION PAPER

RECYCLING FOR RESOURCE SECURITY AND CIRCULAR INDUSTRIAL TRANSFORMATION

A Policy Recommendation Paper for Pakistan



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Recycling for Resource Security and Circular Industrial Transformation: A Policy Recommendation Paper for Pakistan

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Disclaimer

This is an independent policy recommendation paper. It does not represent an official position of the Government of Pakistan, the Government of Punjab, any university, funder or international organization. Proposed targets are deliberately staged as baselines-to-be-set where reliable administrative data do not yet exist.

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Abbreviations

Abbreviation	Meaning
DPP	Digital Product Passport
EPR	Extended Producer Responsibility
ESPR	Ecodesign for Sustainable Products Regulation
FWMC	Faisalabad Waste Management Company
MRF	Material Recovery Facility
MSW	Municipal solid waste
NDC	Nationally Determined Contribution
PIW	Pre-consumer / post-industrial textile waste, as defined by the cited source
SME	Small and medium enterprise
t/day	Tonnes per day

Executive summary

Pakistan should treat recycling as resource-security and industrial-competitiveness infrastructure—not as a residual municipal service. The strongest near-term opportunity is a sequenced programme that links verified material-flow data, recovery infrastructure, safer markets and industrial demand, beginning with Faisalabad's already-planned waste investments and the country's export-oriented textile base.

59.7%

Textiles and apparel accounted for approximately 59.7% of Pakistan's merchandise exports in July–March 2025–26.

Calculated from Pakistan Economic Survey 2025–26 values: US$13.582 billion / US$22.742 billion.

Five principal findings

- The economic case is larger than waste diversion. Recycling can reduce exposure to imported inputs, improve export traceability, recover value from industrial residues and create safer work—provided recovered materials meet consistent quality specifications.
- The evidence base is fragmented. National and local data use different years, definitions and system boundaries. A national material-flow baseline and facility-level weighing must precede rigid recycling targets.
- Faisalabad is the most credible demonstration region because an official 2023 plan estimated 1,860 tonnes of waste per day and Punjab has proposed a 500-tonne-per-day MRF. This creates a real platform for source separation, organics recovery and performance contracting.
- Textiles warrant a dedicated circularity programme. A primary industry study estimated 887 thousand tonnes of pre-consumer textile waste annually, 270 thousand tonnes of domestic post-consumer textiles and 809 thousand tonnes of second-hand clothing imports in 2023. These figures describe different streams and are not a single net waste balance.
- Agricultural, food and poultry by-products are material opportunities, but generic national residue estimates are not investment-grade. District inventories must test seasonality, competing uses, moisture, contamination, logistics and biosecurity before facilities are financed.

Priority recommendation

Establish a time-bound Pakistan Circular Resources Mission with a federal secretariat, provincial delivery units and an independent technical advisory panel. Its first two years should fund baselines, standards, traceability, pilot procurement and a Faisalabad demonstration portfolio. Capital support should then be released against verified feedstock, offtake, environmental compliance and transparent unit economics.

1,860 t/day

Faisalabad waste generation in the official 2023 planning estimate.

Annualized calculation: 1,860 × 365 = 678,900 tonnes. This is a planning estimate, not a weighbridge series.

What government should decide now

- Mandate a common material-flow and recycling measurement protocol, beginning with municipal, textile, plastics, organics and priority hazardous streams.
- Convert Faisalabad's planned MRF and landfill investments into an integrated demonstration programme with source separation, organics trials, worker safeguards and public reporting.
- Launch a textile circularity compact covering waste classifications, certified sorting, recycled-content quality, export traceability, chemical safety and circular public procurement.
- Prepare EPR rules stream by stream, with producer registers, eco-modulated fees, auditable fund governance and a just-transition plan for informal workers.
- Use milestone-based blended finance; do not subsidize plants without verified feedstock, offtake and environmental permits.

01

Purpose, scope and method

FROM CONFERENCE PROPOSITION TO IMPLEMENTABLE POLICY

The report converts a broad call for recycling into a staged policy programme. It uses a resource-security lens, tests headline claims against authoritative sources and treats missing data as a governance constraint rather than a reason to invent precision.

1.1 Purpose and policy question

The central policy question is not simply how Pakistan can recycle more. It is how public policy can create reliable markets in which materials are identified, safely recovered, upgraded to specification and purchased—while avoiding pollution transfer, unsafe work and poorly utilized infrastructure.

1.2 Scope

The analysis covers Pakistan, with Faisalabad as an implementation demonstration and selective attention to South Punjab's bioeconomy potential. It focuses on municipal materials, textiles, plastics, agricultural and food by-products, poultry residues and water-related safeguards. Electronic, construction and hazardous waste are addressed only where institutional design overlaps; each requires its own technical rules.

1.3 Method

The data presented in this report were compiled from papers presented at the International Conference on Recycling, government publications, reports issued by international organizations, and primary project reports available online.

02

Pakistan's resource-security case

VALUE RECOVERY, TRADE RESILIENCE AND PUBLIC VALUE

Recycling policy should be evaluated by four linked outcomes: reduced material risk, higher domestic value addition, lower environmental harm and better work. Waste diversion is necessary, but it is not a sufficient success metric.

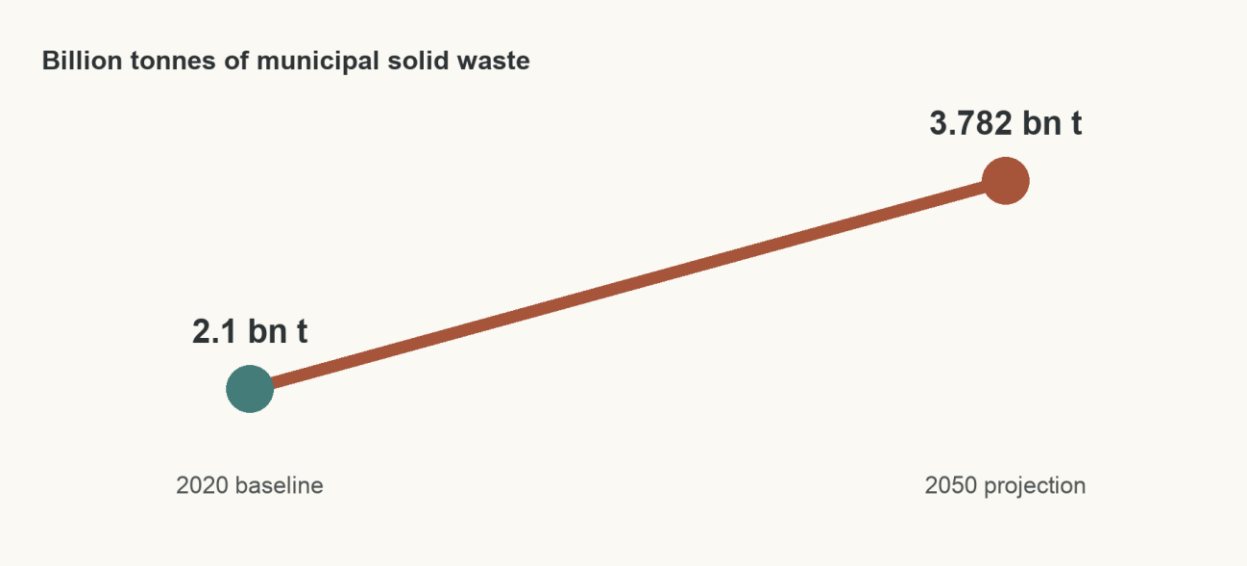

Figure 1. Global municipal solid waste is projected to rise by about 80% by 2050
Source: United Nations Environment Programme & International Solid Waste Association (2024).

2.1 Why recycling is an industrial policy issue

A circular materials system connects waste generators, collectors, sorters, processors, manufacturers, laboratories, financiers and regulators. Failure at any link reduces material value. Mixed collection contaminates feedstock; uncertain grades depress prices; weak chemical controls can recirculate hazardous substances; unstable offtake strands capital. Policy must therefore develop the market system, not merely purchase equipment.

2.2 Trade raises the value of traceability

Textiles and apparel generated US$13.582 billion of Pakistan's US$22.742 billion merchandise exports in July–March 2025–26—approximately 59.7% by calculation. Export-market requirements are moving toward better product information, durability, recycled-content claims and waste prevention. The European Union's Ecodesign for Sustainable Products Regulation creates a framework for digital product passports (DPP), while product-specific requirements will be set through subsequent measures. Pakistan should prepare data systems early without claiming compliance dates that have not been fixed for every textile product group.

US$13.6 bn

Textile and apparel exports, July–March 2025–26.

Pakistan Economic Survey 2025–26; provisional period value.

2.3 The cost of weak measurement

When definitions are unstable, investments are vulnerable to double counting and feedstock error. ‘Recycled’, ‘recovered’, ‘collected’, ‘diverted’ and ‘processed’ are not interchangeable. A national protocol should specify system boundaries, moisture basis, contamination, mass balance, chain of custody and treatment of imports and exports.

Policy objective	Outcome metric	Failure to guard against
Resource security	Verified displacement of virgin/imported material	Counting collected material with no end market
Industrial competitiveness	Specification-compliant recycled input sold to manufacturers	Subsidizing low-quality output
Environmental protection	Net reduction in pollution and uncontrolled disposal	Shifting pollution to informal or poorly permitted processors
Inclusive livelihoods	Safer, formalized and better-paid recovery work	Eliminating livelihoods without transition support

03

Faisalabad as a demonstration region

BUILD FROM EXISTING PLANS, THEN PROVE PERFORMANCE

Faisalabad offers a rare combination of large municipal flows, textile industry, academic capacity and planned recovery infrastructure. The demonstration should integrate these assets and publish results, not create a stand-alone showcase plant.

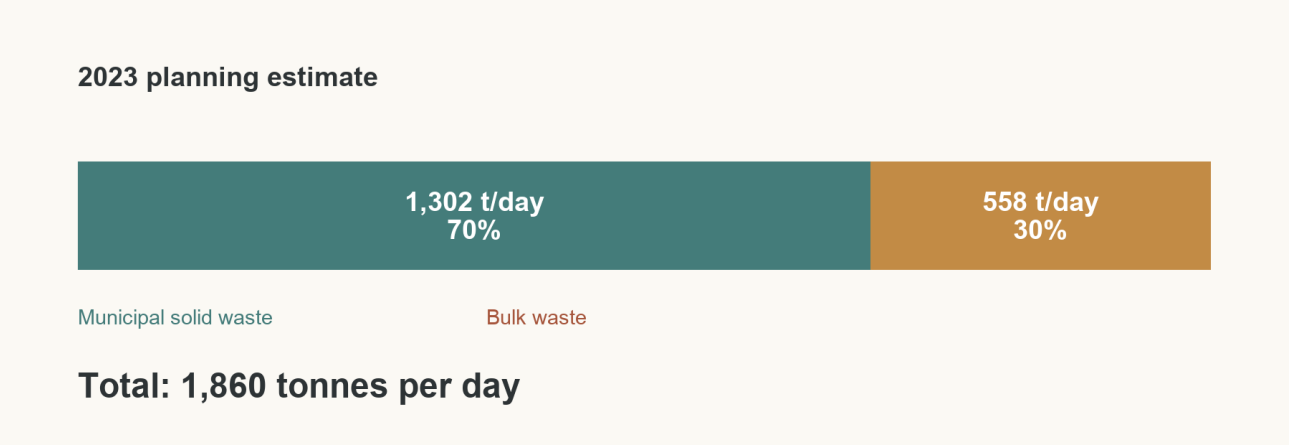

Figure 2. Faisalabad's official planning estimate is 1,860 tonnes of waste per day
Source: The Urban Unit (2023).
Note: The estimate applies a 0.5 kg/person/day generation factor to a 2023 population estimate. It comprises 1,302 t/day municipal solid waste and 558 t/day bulk waste; it is not continuous weighbridge data.

3.1 Correcting the baseline

The paper presented in conference reported approximately 3,700 tonnes per day for Faisalabad. However, the direct official planning source reported an estimated 1,860 tonnes per day in 2023. This report adopts the latter and flags the need for weighbridge reconciliation. Annualized mechanically, 1,860 tonnes per day equals 678,900 tonnes per year; this does not imply that all material is collectible or recoverable.

3.2 Start with the planned MRF

The Punjab Municipal Development Fund Company describes a proposed 500-tonne-per-day MRF for Faisalabad, an expected recycling rate of 10% and an indicative 200 tonnes per day of organic material. These are project expectations, not operating results. The investment should be paired with route-level measurement, source-separation trials, transparent residue accounting and independent compositional audits.

Workstream	First 24 months	Decision gate
Measurement	Weighbridges; route and generator IDs; quarterly composition studies	No expansion until mass balance closes within an agreed tolerance
Source separation	Trials with markets, institutions, textile clusters and selected neighborhoods	Scale only where participation and contamination thresholds are met
MRF commissioning	Performance specification, acceptance tests, downtime and residue disclosure	Payments tied to verified throughput and saleable output

Workstream	First 24 months	Decision gate
Organics	Characterization, contamination controls and small controlled trials	No large plant before feedstock and offtake are contracted
Worker transition	Registration, protective equipment, service contracts and grievance system	Independent occupational-safety review
Public reporting	Monthly dashboard and annual audited material-flow statement	Open data as a condition of public support

3.3 A regional learning platform

Universities should operate as independent measurement and testing partners: characterize materials, validate recycled-content claims, conduct process and life-cycle studies, and publish replicable protocols. They should not be sole project operators or certifiers of facilities in which they have a financial interest. A conflict-of-interest policy and external proficiency testing are essential.

500 t/day

Proposed Faisalabad material recovery facility intake capacity.

Project description, not observed throughput. It is about 27% of the 1,860 t/day planning estimate by simple calculation.

04

Circular textiles and export resilience

TURN HETEROGENEOUS WASTE INTO TRUSTED INDUSTRIAL FEEDSTOCK

Pakistan's textile opportunity is not a single pile of waste. Pre-consumer offcuts, spinning waste, overproduction, domestic post-consumer textiles and imported second-hand clothing require different classifications, quality controls and markets.

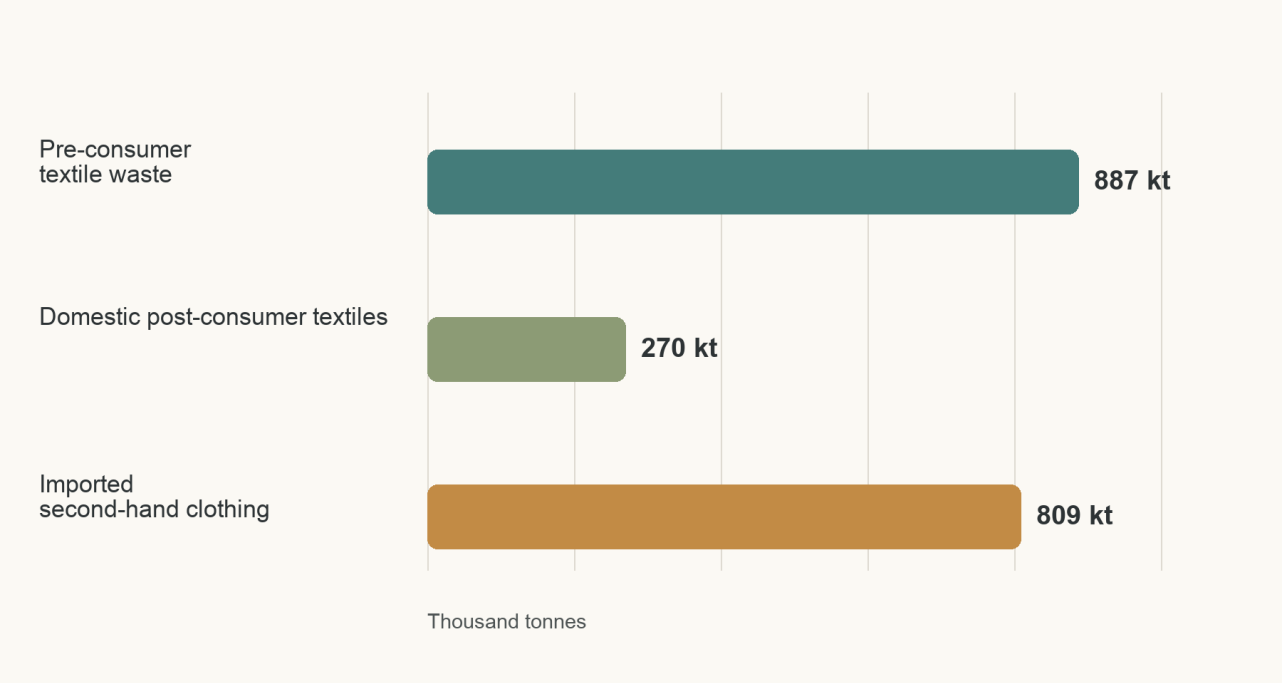

Figure 3. Pakistan's large textile flows differ in definition and should not be treated as one waste balance

Source: Reverse Resources, National Textile University & SMEP (2025).

Note: Pre-consumer and domestic post-consumer values are annual estimates; second-hand clothing is a 2023 import volume. Streams may move through reuse, export, downcycling or disposal and should not be summed as net waste without a mass-flow model.

4.1 Evidence and interpretation

The primary industry study estimates 887 thousand tonnes of pre-consumer textile waste per year, including spinning waste, mill waste, ready-made-garment waste and overproduction/deadstock; 270 thousand tonnes of domestic post-consumer textiles annually; and 809 thousand tonnes of second-hand clothing imports in 2023. The study provides the best consolidated sector picture reviewed, but its estimates should be converted into a recurring statistical system.

4.2 Policy package

Policy instrument	Immediate action	Intended result
Classification and codes	Publish harmonized grades for fiber composition, contamination, color and source	Comparable contracts and statistics
Traceability	Pilot batch IDs and mass-balance records in export clusters	Credible recycled-content claims and DPP readiness

Policy instrument	Immediate action	Intended result
Quality infrastructure	Accredit testing for fiber content, restricted substances and performance	Reduced buyer risk
Circular design	Support mono-materials, separability, durability and repairability	Higher-value recovery over time
Public procurement	Specify verified recycled content where performance permits	Stable domestic demand
Innovation finance	Milestone grants for sorting, mechanical recycling and safe chemical pathways	Scale technologies with measured yields
Waste trade governance	Distinguish reusable clothing, recycling feedstock and waste; enforce contamination rules	Reduce dumping and improve statistics

4.3 Avoid premature targets

A uniform recycled-content mandate would be risky before testing capacity, feedstock quality, product performance and traceability are established. Government should first adopt product- and fiber-specific baselines; use voluntary procurement and buyer compacts; then introduce minimums where supply and verification are demonstrably ready. Chemical recycling proposals require particular scrutiny of energy use, solvents, emissions, hazardous residues and actual material yields.

4.4 Export-market readiness

The European Union’s textile strategy envisages durable and recyclable products, digital product information, producer responsibility and action on unsold goods and waste exports. Large enterprises face a ban on destruction of unsold apparel and footwear from July 2026 under implementing EU rules, with later application for medium-sized companies. Pakistani exporters should build item-level data architecture, but public guidance must distinguish enacted obligations from product rules still under development.

05

Municipal materials, plastics and livelihoods

CREATE VERIFIED MARKETS WITHOUT SACRIFICING WORKER SAFETY

Municipal recycling depends on collection quality and livelihoods. EPR, MRFs and procurement can improve recovery, but only if informal workers are included in system design and pollution is not displaced to unregulated processors.

5.1 Plastics: large loss, weak circularity

UNEP reported that Pakistan generated approximately 3.9 million tonnes of plastic waste in 2020, more than 65% of which was mismanaged; plastic represented about 18% of municipal solid waste, while manufacturing used only about 3% recycled content. These estimates presented by UNEP in 2023 and should be updated through a national plastics baseline.

3.9 mn t

Plastic waste generated in Pakistan in 2020, as reported by UNEP.

Use as a national planning estimate, not a current weighbridge total.

5.2 EPR must finance outcomes

EPR should be introduced stream by stream, beginning where producer identification and packaging data are feasible. Fees should vary with recyclability and harmful additives; funds should be ring-fenced; operators should be competitively contracted; and public reporting should reconcile products placed on market, collected quantities, verified recycling, residues and expenditure.

Component	Minimum design requirement	Guardrail
Producer register	Unique identifier, material declarations and enforcement for free riders	Do not place compliant firms at a cost disadvantage
Eco-modulated fees	Higher fees for hard-to-recycle formats and harmful additives	Use tested criteria; avoid arbitrary tariff changes
Service procurement	Outcome-based contracts for collection, sorting and recycling	Independent verification and transparent unit costs
Informal-worker integration	Registration, contracts/cooperatives, PPE, social protection pathways	No forced displacement without viable transition
Claims assurance	Chain-of-custody and mass-balance rules	Penalties for false recycled-content claims
Public reporting	Annual audited statement by material and destination	Disclose residues and exports, not only collection

5.3 Municipal action hierarchy

- Prevent avoidable material use and support reuse systems where sanitation and logistics permit.
- Separate high-value dry materials and clean organics at source, beginning with concentrated generators.
- Use MRFs to improve—not replace—source separation; measure residue rates and saleable quality.
- Procure recycled-content products that meet performance and safety specifications.
- Dispose of non-recoverable residues in compliant facilities and monitor leakage.

06

Agriculture, food and poultry resource loops

INVENTORY FIRST; INVEST AGAINST VERIFIED FEEDSTOCK AND DEMAND

Pakistan's primary agricultural and poultry outputs imply substantial by-products. Yet crop production is not residue availability, and biological materials bring moisture, seasonality, pathogens and competing uses that can make generic national estimates misleading.

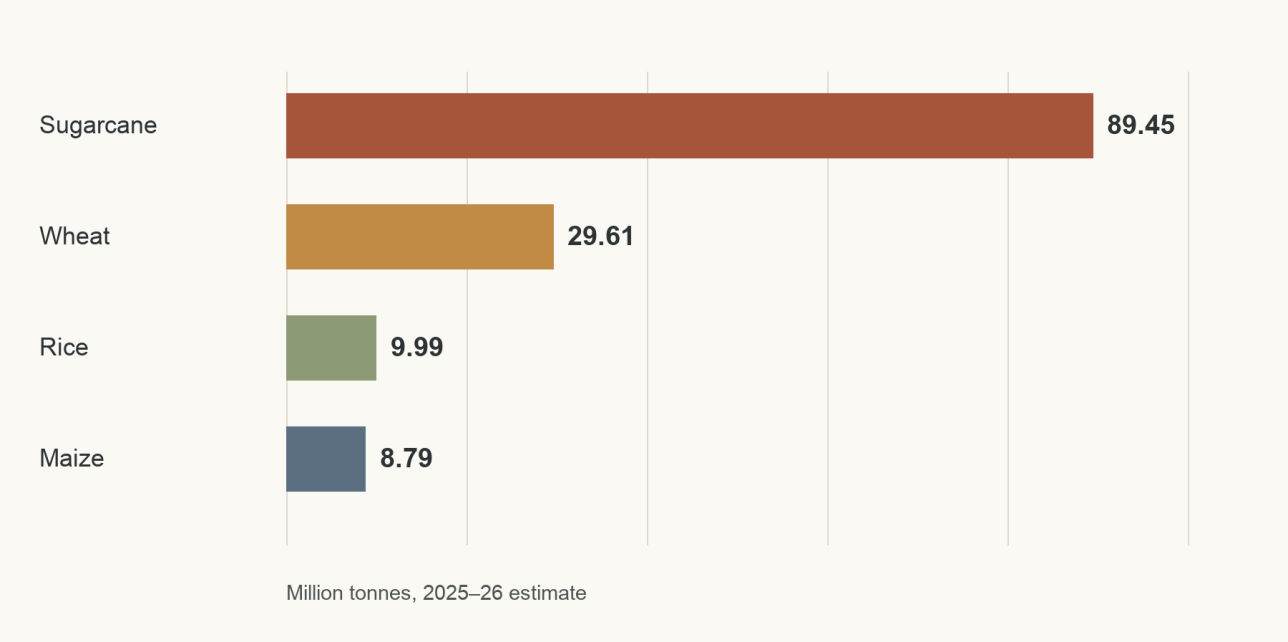

Figure 4. Large crop outputs justify a district-level biomass inventory

Source: Finance Division, Government of Pakistan (2026).

Note: Primary crop output is not available residue. Cotton is excluded because the reported production unit is bales rather than tonnes in the cited table.

6.1 An investable biomass inventory

For each commodity and district, the inventory should measure primary output, residue-to-product relationships, current uses, sustainable removal fraction, moisture, storage losses, collection radius, seasonal window, contamination and delivered cost. Residues already used for fodder, soil cover, household energy or small industry must not be treated as free feedstock.

Stream	Potential pathway	Critical screen before investment
Sugarcane by-products	Bagasse energy/materials; press-mud compost or digestion	Mill-level mass balance; emissions; soil nutrient value
Wheat and rice residues	Bedding, fiber products, controlled energy or biochar	Competing fodder use; soil protection; air-emissions controls
Food market organics	Animal feed where safe; composting; anaerobic digestion	Source purity, pathogens, packaging contamination, offtake

Stream	Potential pathway	Critical screen before investment
Poultry litter	Nutrient products; controlled composting or digestion	Biosecurity, ammonia, nutrient loading, transport
Eggshells and processing residues	Calcium products and specialized recovery	Separation quality, sanitation, market scale
Wastewater sludge	Only pathways supported by testing and regulation	Metals, pathogens, persistent pollutants, land-application rules

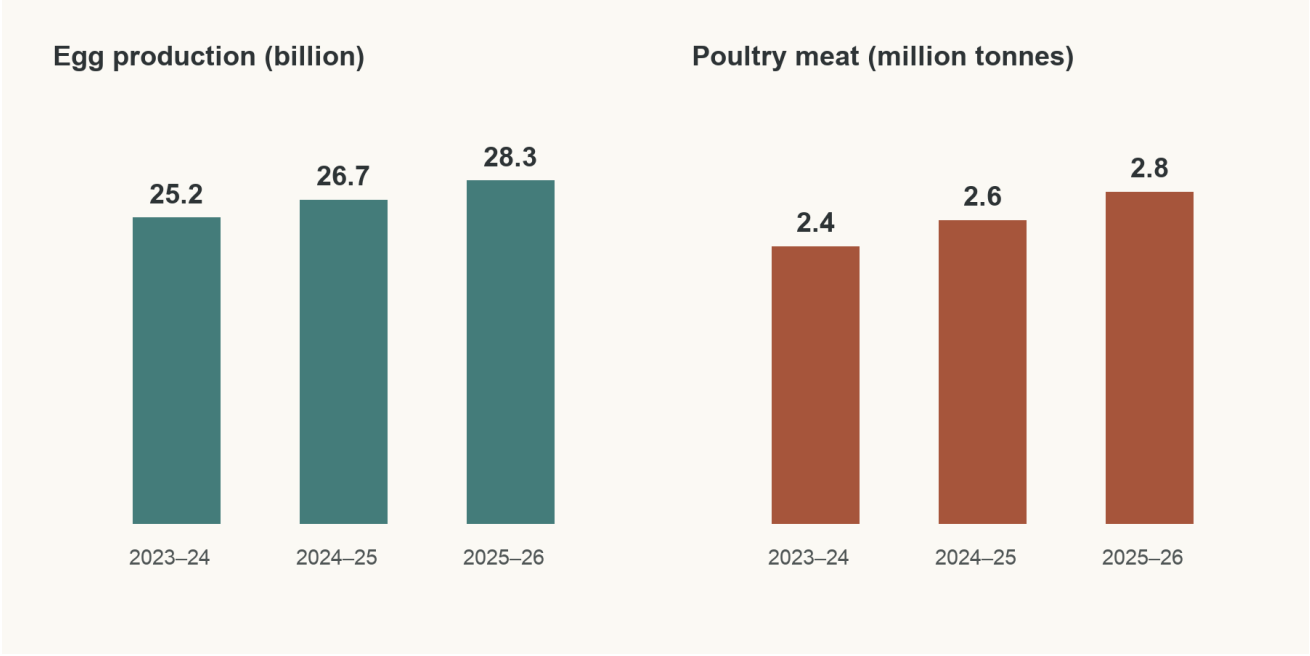

Figure 5. Poultry output is expanding, increasing both by-product opportunity and biosecurity risk

Source: Finance Division, Government of Pakistan (2026).

Note: Official poultry values are statistically calculated using 2005–06 parameters; they are suitable for context but should not substitute for facility-level records.

6.2 Food loss and waste measurement

UNEP estimates 1.05 billion tonnes of food waste globally in 2022, but Pakistan lacks a sufficiently robust national baseline for policy targeting. Government should adopt the Food Loss and Waste Accounting and Reporting Standard or an equivalent protocol, run commodity and city studies, and distinguish upstream loss from retail, food-service and household waste. Unsupported national percentages should not drive plant sizing.

07

Water, wastewater and groundwater safeguards

CIRCULARITY MUST NOT RECIRCULATE POLLUTION

Water reuse and material recovery can reduce pressure on freshwater and fertilizers, but unsafe reuse, contaminated sludge and poorly controlled processing can shift environmental burdens. Groundwater governance is integral to circular industrial policy.

7.1 Groundwater dependency raises the stakes

The World Bank reports that groundwater provides more than half of agricultural water, around 70% of domestic water nationally and 90% of rural domestic water in Pakistan. A Punjab farmer survey conducted in 2022 found that most sampled tubewells were diesel- or electricity-powered and only 6% solar-powered at that time. Solar pumping can reduce emissions and energy cost, but without abstraction monitoring and water allocation it can also weaken the marginal-cost signal. The policy response is metering, aquifer management and efficient irrigation—not opposition to solar technology.

7.2 Safe industrial water circularity

Action	Evidence required	Safeguard
Process-water reuse	Flow and quality baseline; fit-for-purpose specifications	Do not require potable quality where unnecessary; monitor salts and chemicals
Common effluent treatment	Cluster load inventory; operator and tariff model	Continuous monitoring, sludge management and polluter-pays charging
Sludge/resource recovery	Chemical and pathogen characterization; market test	Prohibit land application without standards and traceability
Pesticide/container management	Product register and return system	Prevent reuse of hazardous containers and uncontrolled washing
Groundwater abstraction	Metering, aquifer status and water accounting	Pair solar support with abstraction governance

7.3 Existing policy foundations

Pakistan's National Climate Change Policy 2021 already supports integrated waste management, source separation, reuse, wastewater treatment and resource efficiency. The National Hazardous Waste Management Policy 2022 and its action plan provide foundations for inventories, licensing, permitting, monitoring, 3R approaches and polluter-pays implementation. The task is to connect these instruments to material-market policy and provincial enforcement.

08

Institutional Architecture and Financial Governance

ASSIGN DECISIONS, DATA AND ACCOUNTABILITY

Recycling is treated as strategic industrial investment through a mission structure that coordinates federal, provincial, and local roles while keeping permits, finance, and verification separate—enforced by performance-based funding, polluter-pays mechanisms, transparent cost accounting, anti-corruption controls, digital traceability, and social safeguards to turn millions of tonnes of waste into verifiable economic value.

8.1 Pakistan Circular Resources Mission

Level	Core responsibilities	Accountability mechanism
Federal mission secretariat	Definitions; national data standard; trade alignment; EPR framework; national reporting	Annual report to an inter-ministerial steering committee and public data release
Provincial delivery units	Permitting; local targets after baseline; procurement; enforcement; project pipeline	Quarterly portfolio review and environmental compliance disclosure
Local authorities / waste companies	Collection, contracts, route data, source separation and public engagement	Service-level dashboard and audited mass balance
Standards and laboratories	Material grades, testing methods, accreditation and proficiency testing	Public method register and inter-laboratory comparison
Independent technical panel	Review baselines, investments, methods and claims	Published opinions and conflict-of-interest declarations
Industry and worker bodies	Offtake, design changes, data, worker transition and innovation	Compacts with measurable commitments

8.2 Governance and Finance Principles

Principle	Strategy	Action	Outcome
Strategic Budget Classification	Classify recycling as strategic industrial infrastructure, not municipal waste expenditure.	Create dedicated budget head under Commerce or Industries; allocate five percent of development budget to circular economy with multi-year commitment.	Predictable ring-fenced funding; clear government signal to investors; recycling treated as industrial policy.
Performance-Linked Disbursement	Release capital only against verified milestones, not procurement or construction schedules.	Disburse in five tranches: pre-feasibility, feedstock/offtake verification, permits, commissioning tests, and sustained performance (hold 15–20 percent as retention).	Public funds protected from wastage; only viable projects funded; executing agencies maintain performance discipline.

Principle	Strategy	Action	Outcome
Cost Recovery and Fiscal Sustainability	Shift recurring costs to polluters and producers; reserve public funds for capital and early-stage risk.	Mandate EPR fees with eco-modulation, landfill taxes, and pay-as-you-throw pricing; offer five-year tax holidays and zero customs duties on recycling equipment.	Recurring costs self-financing; public funds leveraged for capacity building; no recurring treasury burden.
Transparent Unit Cost Accounting	Standardize cost reporting across the recycling value chain for fiscal oversight and benchmarking.	Mandate audited per-tonne reporting for collected, sorted, saleable recyclate, recycled, and safely disposed; link future budgets to cost reduction and recovery rates.	Fiscal transparency enhanced; inefficiencies identified; budget allocations evidence-based.
Robust Financial Oversight	Strengthen public financial controls and anti-corruption safeguards across the project cycle.	Require third-party audits at each tranche; mandate real-time fund utilization dashboard; enforce asset tagging and physical verification; impose strict penalties for fund diversion.	Leakage minimized; donor and investor confidence improved; fiscal accountability institutionalized.
Digital Traceability and Governance	Build digital governance infrastructure to verify performance and ensure export compliance.	Mandate Digital Product Passports and blockchain-enabled traceability for textiles and e-waste; align with EU regulatory requirements by 2027.	Data-driven governance; secured international market access; recycling capacity converted into export advantage.
Institutional Coordination Framework	Establish clear mandates and coordination across federal, provincial, and regulatory bodies.	Constitute inter-ministerial steering committee chaired by Finance, with Commerce, Industries, Climate Change, Provincial Finance, and FBR; mandate quarterly reviews and consolidated public reporting.	Institutional fragmentation overcome; policy coherence achieved; efficient resource utilization.
Just Transition and Social Safeguards	Condition disbursements on worker protection, community welfare, and informal sector formalization.	Require worker transition plans with training and alternative employment; establish time-bound grievance redressal; mandate independent ESIA before each tranche.	Social conflicts minimized; just transition ensured; legal and reputational risks managed.

09

Phased implementation roadmap

SEQUENCE EVIDENCE, MARKETS AND INFRASTRUCTURE

The roadmap separates what can be decided immediately from what depends on verified baselines. It favors a small number of accountable workstreams over a long, unfunded list of activities.

9.1 Three phases

Phase	Timing	Priority outputs	Gate to next phase
I — Establish	0–12 months	Mission mandate; common definitions; source register; Faisalabad baseline; textile compact; EPR design; safeguards	Approved protocols, named owners, funded workplans and public baseline timetable
II — Demonstrate	12–30 months	MRF/source-separation trials; textile traceability; organics pilots; laboratories; worker transition; procurement	Independent evaluation of mass balance, quality, unit cost, compliance and livelihoods
III — Scale	30–60 months	Expand proven models; adopt calibrated targets; mature EPR; blended-finance pipeline; national reporting	Targets and investment based on verified performance, not aspiration

9.2 KPI framework

Three primary outcomes are recommended. Each is paired with drivers and guardrails that prevent collection or throughput from being mistaken for public value. Numerical targets should be set after a 12-month baseline, except for time-bound institutional deliverables.

Metric	Definition / calculation	Cadence and owner	Guardrail
1. Verified circular material output	Tonnes of specification-compliant recovered material sold to an identified end user ÷ tonnes entering the measured system	Monthly facility; quarterly provincial aggregation	Disclose residues, inventory change and exports
2. Virgin/imported material displaced	Verified tonnes of recycled input used in qualifying production, with approved chain-of-custody method	Quarterly industry compact; annual assurance	No claim where functional equivalence or mass balance is unverified
3. Net environmental compliance rate	Share of supported facilities meeting permits, monitoring and residue requirements	Quarterly regulator; annual independent audit	Immediate escalation for hazardous releases or worker harm
Driver: source-separation quality	Accepted target material ÷ collected material in trial streams	Weekly operator dashboard	Track participation and service equity
Driver: offtake coverage	Share of planned output covered by credible purchase commitments	Monthly project pipeline	No single-buyer concentration above policy threshold without mitigation
Guardrail: decent-work transition	Registered workers receiving contracted access, PPE/training and grievance coverage	Quarterly local unit / worker body	Track earnings and injuries, not only registration

10

Conclusions and priority decisions

A CREDIBLE CIRCULAR ECONOMY BEGINS WITH VERIFIED FLOWS

Pakistan has the economic scale, industrial capacity and policy foundations to act. The immediate priority is to establish a shared evidence system and an implementation architecture that assigns accountability and rewards verified outcomes.

10.1 Central conclusion

Recycling should be repositioned as a national resource-security and export-competitiveness system. Policy implementation should follow five sequential steps:

1. Map and measure material flows.
2. Establish grades, standards and rules for environmental claims.
3. Safeguard workers, communities and ecosystems.
4. Create predictable demand for recovered materials.
5. Finance infrastructure only after feedstock, offtake, and environmental and verification requirements have been satisfied.

10.2 Decisions requiring authorization

Decision	Lead authority	Recommended deadline
Establish the Pakistan Circular Resources Mission and adopt a common national material-flow measurement protocol.	Federal Cabinet and designated lead ministry	Within 100 days
Approve the Faisalabad Circular Economy Demonstration Charter, with defined institutional responsibilities and delivery arrangements.	Government of Punjab and relevant local entities	Within 6 months
Launch a Textile Circularity Compact covering traceability, material standards, worker protection and export-market requirements.	Federal ministries responsible for commerce, climate and industry, together with standards bodies and exporters	Within 6 months
Approve stream-specific Extended Producer Responsibility principles and initiate stakeholder consultation.	Federal and provincial environmental authorities	Within 9 months
Establish baseline-assessment and feasibility-financing windows for organic waste and agricultural biomass.	Federal and provincial planning authorities and development-finance partners	Within 12 months
Publish the verified baseline and establish measurable, sector-specific targets for 2030.	Mission Secretariat and provincial governments	After 12 months of verified data collection

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RECYCLING FOR RESOURCE SECURITY

A practical policy programme for circular industrial transformation in Pakistan

The report recommends an evidence-first mission that connects material-flow measurement, recovery infrastructure, industrial quality, export traceability, environmental safeguards and inclusive livelihoods.

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