Pakistan's Green Gold

An Investment Case for Building a Global Biodegradable Packaging Hub

Integrated Investment Case & Value Chain Model.
For Policymakers, Investors, and Development Partners.

The Executive Thesis: From Agricultural Surplus to Export **Powerhouse**

The Situation

Pakistan's food processing sector is the nation's second-largest manufacturing industry, contributing 27o? of manufacturing value-add and 16% of employment.

The Bottleneck

GroMh is constrained by a reliance on imported plastic packaging, leading to significant foreign exchange drain (over $2M annually), export rejection risks in premium markets, and mounting environmental pressure.

The Strategic Opportunity

Leverage Pakistan's massive and low-cost agricultural feedstock base—totaling approximately 40 million tons of crop residue annually—to build a globally competitive biodegradable packaging industry.

The Prize

Capture high-margin export markets in the EU, GCC, and China; achieve import substitution; create skilled jobs; and meet global sustainability goals.

Why the Current Packaging Model is Unsustainable

Economic Drain

USD ~$2.0 Million

in imports in 2023 for HS Code 392390. China accounts for ~43% of this value, representing a key dependency.

Export at Risk

Non-compliant packaging creates a barrier to high-value markets. markets. Key markets like the EU and GCC have stringent standards, leading to rejection risks for Pakistani food exports.

Food Security & Waste

Inadequate packaging solutions shorten shelf life. This addresses a core challenge within Pakistan's food processing sector, impacting domestic food security and commercial value.

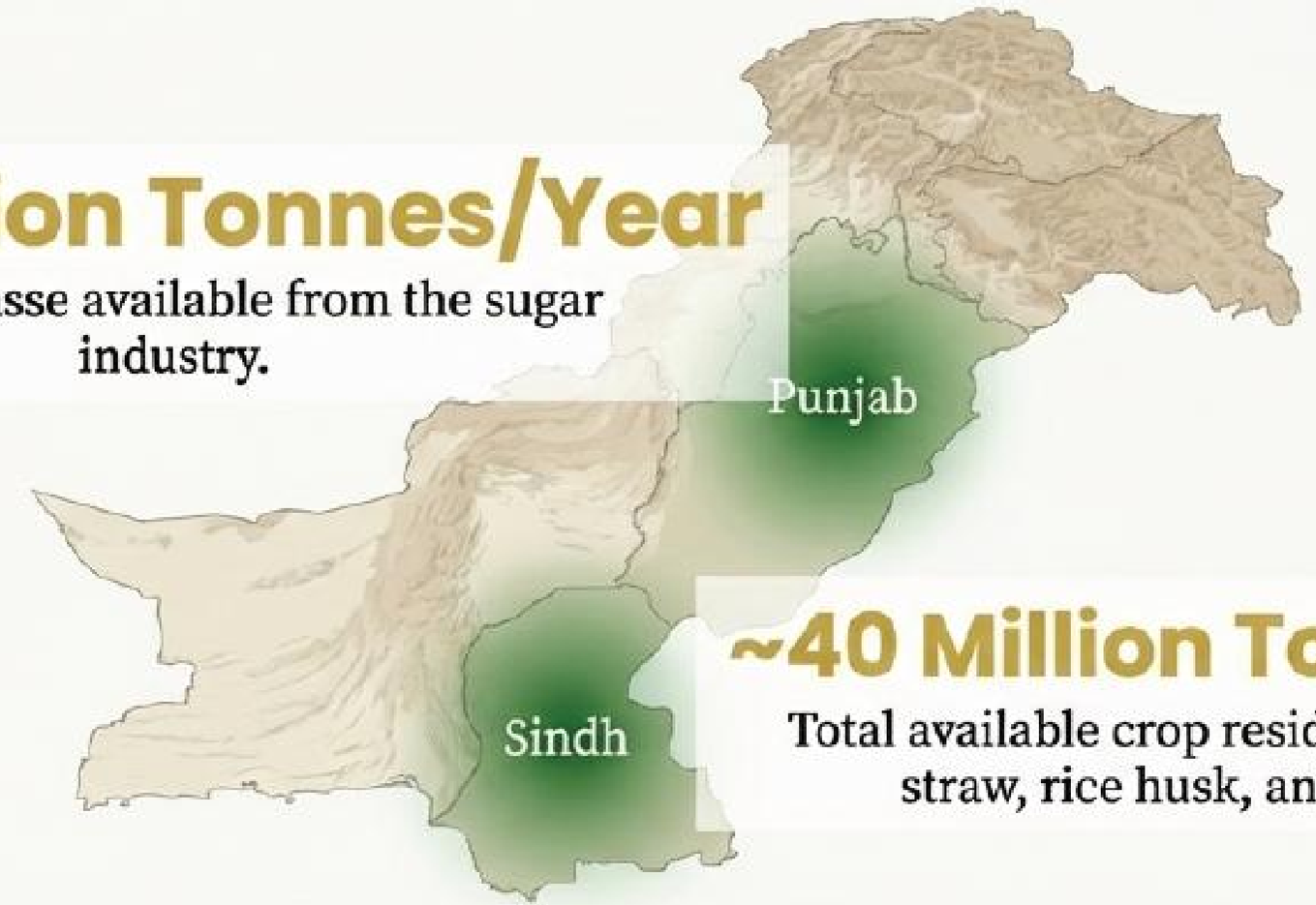
Environmental Pressure

Global and local demand for sustainable alternatives is accelerating, driven by consumers, regulators, and corporate ESG mandates.

Pakistan's Unfair Advantage: An Ocean of Low-Cost Feedstock

~24 Million Tonnes/Year

Sugarcane Bagasse available from the sugar industry.



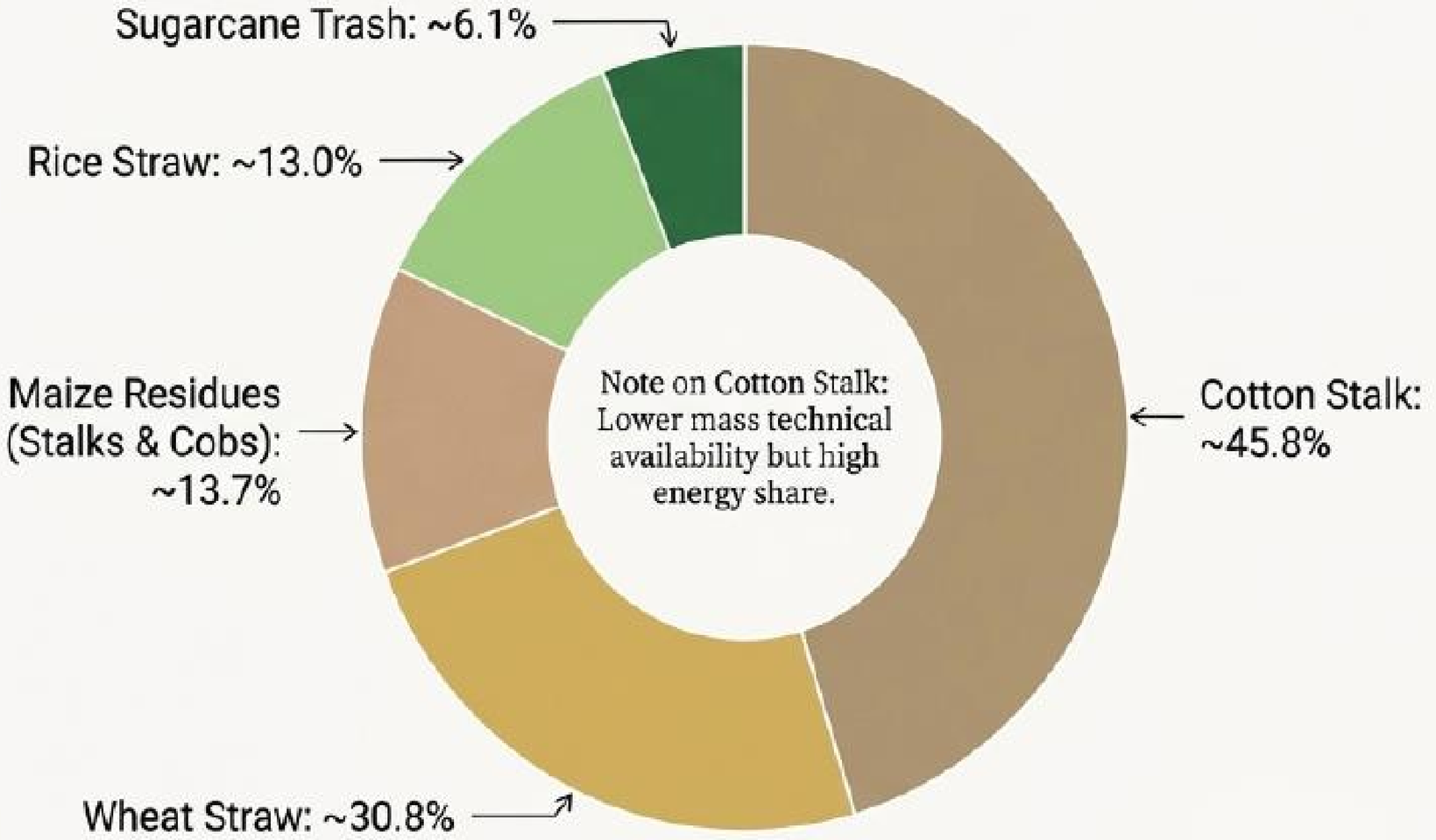
Source: Kashif et.al, 2019

~40 Million Tonnes/Year

Total available crop residue, including wheat straw, rice husk, and maize stover.

This massive, renewable biomass base provides a structural cost advantage over international competitors who rely on purpose-grown crops or synthetic inputs.

Deconstructing the 40 Million Tonne Opportunity



Data sourced from World Bank, 2016.

Insight

The diversity of feedstock, from high-fiber bagasse and straws to starch sources, allows for a flexible production strategy targeting multiple types of biodegradable packaging.

The Integrated Value Chain: From Local Fields to Global Markets

Raw Materials

Bagasse / Starch / Imported PLA Resin

Processing

Polymer Compounding & Conversion (Molding, Extrusion, Thermoforming)

Quality & Compliance

Certification & Quality Control (Targeting EU EN 13432)

Logistics & Export

Export Logistics

Target Markets

High-Value End Markets (China, EU, GCC)

This model combines Pakistan's feedstock advantage with proven global technology to create a world-class, export-focused production system.

A Phased Strategy: Leverage Global Scale, Localize for Value

Pakistan's Edge

- Ultra-low cost for Bagasse (agricultural residue).
- Locally available and low-cost Starch feedstock.

China's Edge

- Massive economies of scale in polymer production.
- Advanced fermentation and processing technology.
- **30–50% lower PLA/PBAT resin costs** than small-scale producers.

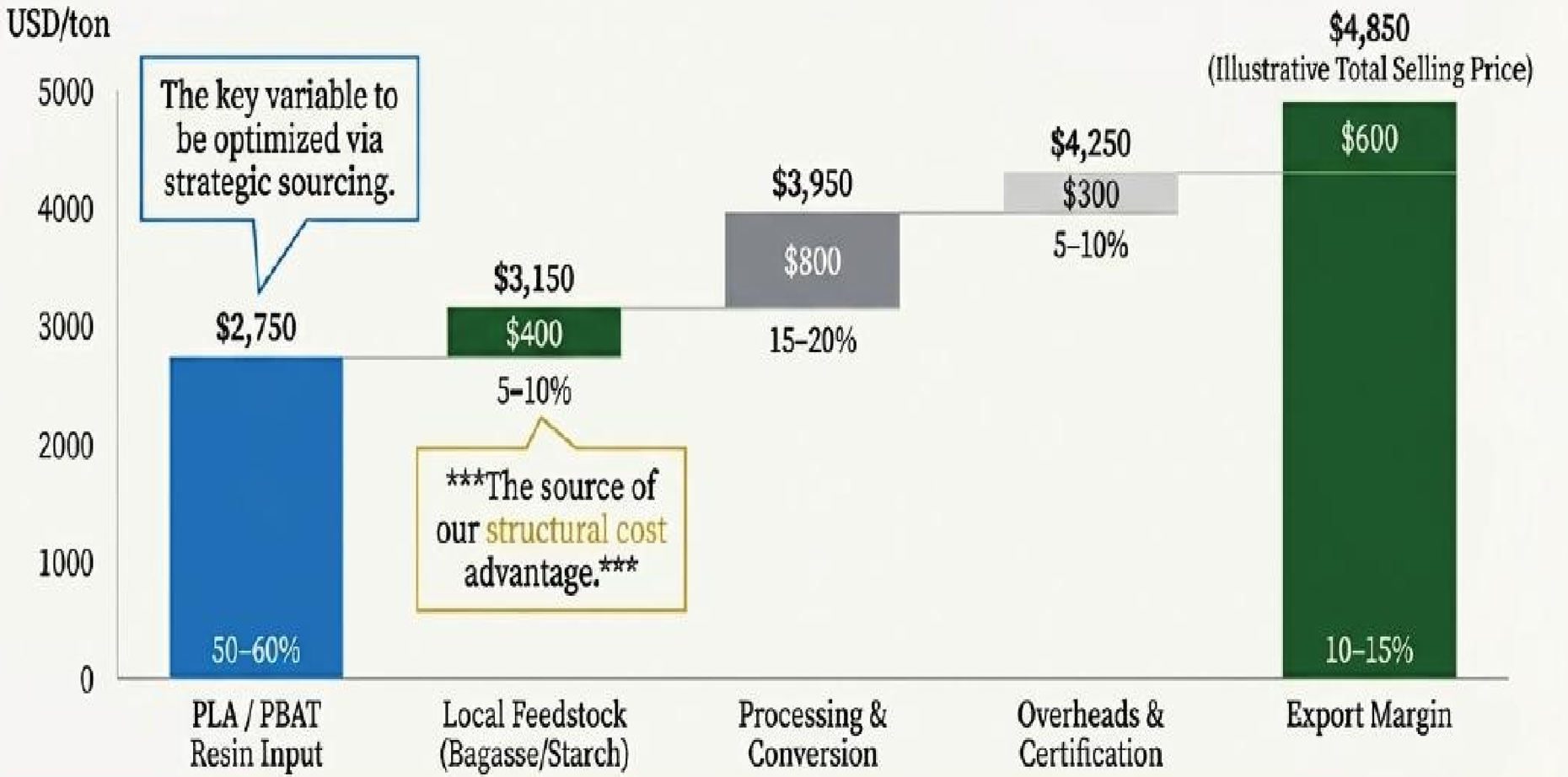
Phase 1: Focus on Downstream Conversion

Initially, leverage China's scale by importing bio-resins (PLA/PBAT) for local conversion into high-margin molded packaging. This is the fastest path to market.

Phase 2: Pursue Upstream Localization

Concurrently, pursue Joint Venture partnerships with Chinese investors to gradually localize polymer production, capturing more of the value chain.

Unit Economics: Favorable Costs Driven by Local Inputs

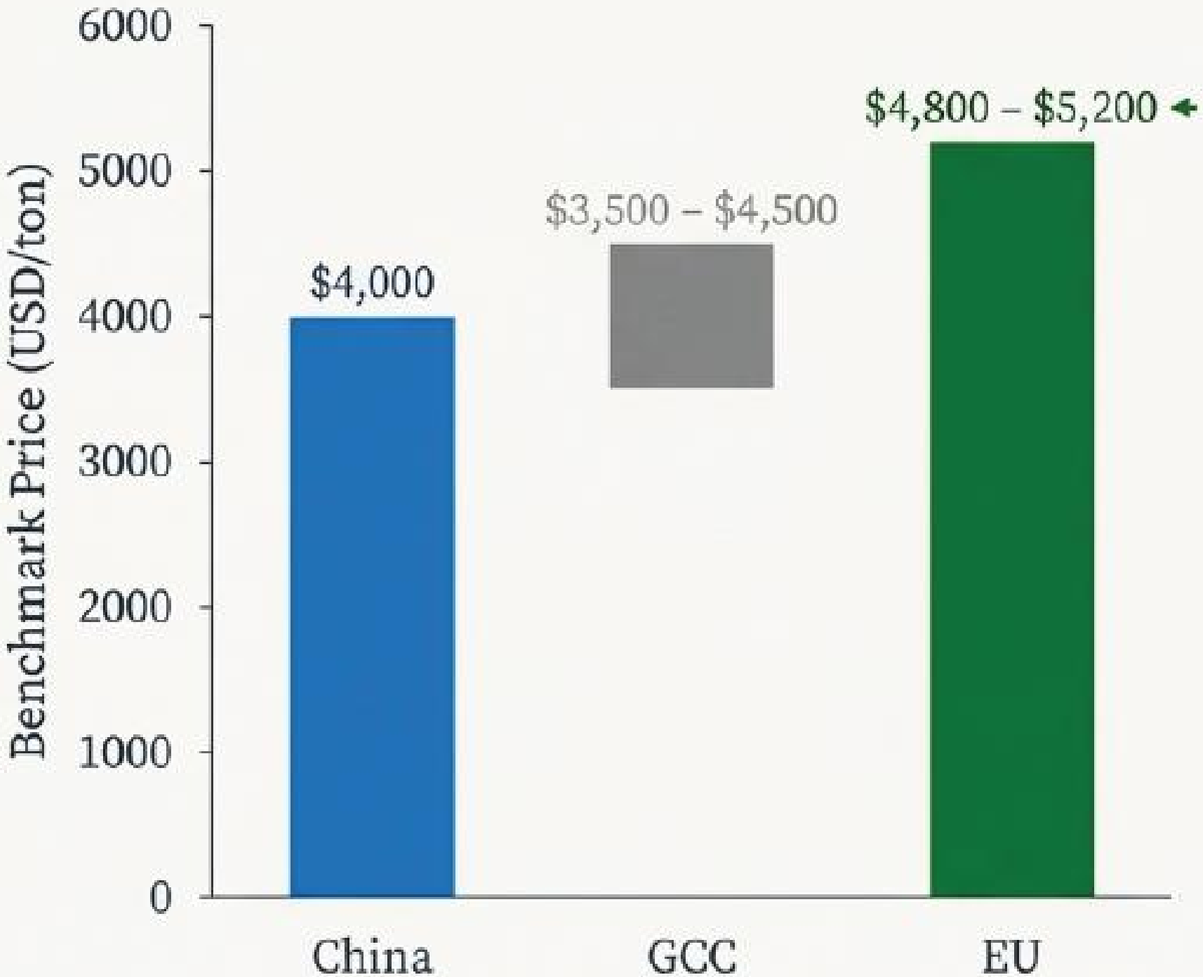


Even with imported primary resins, the extremely low cost of local feedstock creates a highly competitive overall cost structure.

Sources:

- IMARC Group. Biodegradable Packaging Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2024–2033.
- Polaris Market Research. Biodegradable Packaging Market Size, Share & Industry Analysis Report, 2025–2034.
- Fact.MR. Biodegradable Packaging Material Market Outlook 2025–2035.
- Pakistan Bio-Degradable Paper & Plastics Packaging Market (2021–2031). Country Industry Report.

The Prize: Accessing High-Margin, Sustainability-Driven Export Markets



A 20-30% 'Green Premium'

is achievable in the EU market, driven driven by strong regulation (EN 13432) and consumer demand for certified sustainable products.

Source: Market Business Insight, 2025

The Investment Rationale: Why Invest Now

Structural Cost Advantage

Unmatched access to one of the world's largest and lowest-cost agricultural residue bases.

High-Margin Export Focus

Directly targets premium-priced EU, GCC, and Chinese markets driven by strong regulatory and consumer demand.

Proven Import Substitution

A clear opportunity to capture the existing ~$2.0 million domestic market for imported packaging, saving foreign exchange.

Strategic Alignment

Perfectly suited for development within Special Economic Zones (SEZs) and ideal for Chinese JV investment.

Tangible Impact (ESG)

A bankable project that drives rural job creation, reduces agricultural waste pollution, and enhances national food security.

A Mature Industrial Ecosystem with Capable Partners

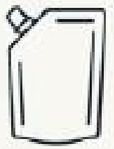
Integrated Leaders

Packages Limited

Flexible packaging, folding cartons

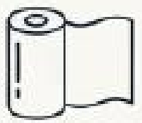
Flexible Packaging Specialists

Dynamic Packaging (Pvt.) Ltd



Supplies Nestlé, Pepsi

IPAK Group



BOPP, BOPET films

Oasis Packaging (Pvt) Ltd

Branded flexible packaging

PET & Beverage Specialists

EcoPack Ltd

Supplier to Coca-Cola, Pepsi

Eco-Pioneers & Niche Players

Baswa Group

Compostable cornstarch tableware

NovumPack

Local partner of Cardia bioplastics

Packlution

Biodegradable food containers

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