accelerate prosperity

german cooperation
DEUTSCHE ZUSAMMENARBEIT

KFW

UNLOCKING GROWTH

SEASON 04

From Post-Harvest Loss to a Financeable Asset Class

COLD CHAIN & COLD STORAGE IN PAKISTAN

Unlocking Growth series produced by Pakistan & Counting with Accelerate Prosperity, funded by BMZ (Federal Ministry for Economic Cooperation and Development) through KfW (Kreditanstalt für Wiederaufbau).
pakistanandcounting.com

PAKISTAN &COUNTING

TABLE OF CONTENTS

01. INTRODUCING THE OPPORTUNITY

02. THE LOCAL PICTURE

03. WHAT'S THE GAP? WHY NOW?

04. WHY PAKISTAN CAN ENTER THIS

05. BUSINESS MODELS & ECONOMICS

06. WHO SHOULD ENTER?

07. USEFUL RESOURCES

Section 01

INTRODUCING THE OPPORTUNITY

The global market, the structural drivers, and where the margin sits

THE GLOBAL COLD CHAIN MARKET

Cold chain is not a niche logistics category. It sits underneath food security, pharmaceutical distribution, export trade, and the entire frozen-food consumer category — and every one of those is growing.

SOURCE	2026 MARKET SIZE	CAGR / HORIZON
MarketsandMarkets	**USD 276.5B**	10.5% to 2031 (USD 455.0B)
Mordor Intelligence	**USD 383.5B**	6.1% to 2031 (USD 515.8B)
Grand View Research	**USD 437.5B**	20.5% to 2033 (USD 1,611.0B)
Fortune Business Insights	**USD 464.3B**	20.5% to 2034 (USD 2,063.3B)

Source: MarketsandMarkets, Mordor Intelligence, Grand View Research, Fortune Business Insights (2026 releases)

NO SINGLE AUTHORITATIVE FIGURE

Major research firms diverge by nearly **$250 billion** depending on scope and methodology.

CONSISTENT ACROSS ALL

Storage is the largest single sub-segment

Roughly half the market.

CONSISTENT ACROSS ALL

Food & beverage is the dominant end use

Across every methodology.

CONSISTENT ACROSS ALL

Asia-Pacific is the fastest-growing region

India alone pacing at ~11% CAGR within APAC.

Source: MarketsandMarkets, Mordor Intelligence, Grand View Research, Fortune Business Insights (2026 releases)

COLD CHAIN DEMAND IS NOT A TREND — IT IS STRUCTURAL

Unlike a consumer fashion cycle, cold chain demand in Pakistan is backed by four hard, non-discretionary drivers.

Post-harvest loss is a standing tax on production

25–40% of perishable fruits and vegetables are lost before reaching a buyer, costing an estimated **$700M–$1 billion** annually

Regulatory tightening creates a demand floor

Independent of agriculture: DRAP has tightened cold-chain enforcement every year since 2020 — vaccines, insulin, and biologics require validated storage regardless of how the export story plays out.

Pakistan has stated its own export ambition

Officials at the January 2026 CPEC 2.0 agriculture conference set a goal of **doubling agricultural exports from roughly $8 billion within three years** — a target that structurally requires more cold-chain infrastructure to hit.

Demographics are shifting demand to frozen food

Rapid urbanization and a growing urban workforce (**36.8%** of the population) are driving the frozen food market from **$0.77–0.81B** (2025/26) toward **$1.08B by 2031**, a 5.74% CAGR.

● Source: Pakistan Business Council; Dawn; Mordor Intelligence (Pakistan Frozen Food Market); Ministry of National Food Security & Research; Dr. Muhammad Azeem Khan (PHDEC advisor) interview, 2026.

THE VALUE LADDER — WHERE THE MARGIN ACTUALLY SITS

Not all cold-chain business models earn the same return. There are four distinct tiers, and Pakistani entrepreneurs should be clear on which one they're entering.

MODEL	RETURN PROFILE	WHO OPERATES IT
3PL rental — chilled	PKR 6–12/kg/month; thin margin, price-taker	Independent storage operators
3PL rental — frozen	PKR 9–18/kg/month; slightly better margin than chilled	Independent storage operators
Captive / export processing	18–36 month payback; operator captures product margin, not just a storage fee	Food processors, exporters
Pharma-validated storage	Highest margin; a single temperature excursion can void PKR 500M–1.2B in product	DRAP-validated operators, pharma distributors

◐ Source: Izhar Foster (2026 Buyer's Guide); SMEDA Pre-Feasibility Study; cross-referenced against Indian NHB/F-Max benchmarks.

Section 02

THE LOCAL PICTURE

Production, capacity, and the commodities that have no cold chain at all

PAKISTAN TODAY — PRODUCES ENOUGH, PRESERVES ALMOST NOTHING

TOTAL COLD-STORAGE CAPACITY

< 1M tonnes

Nationwide.

COVERAGE

Under 8%

A seasonal-peak comparison, not a claim that 15M tonnes needs storing at once.

FACILITY COUNT

~507

98.6% are single-owner, fragmented operations.

TOTAL FRUIT & VEGETABLE PRODUCTION

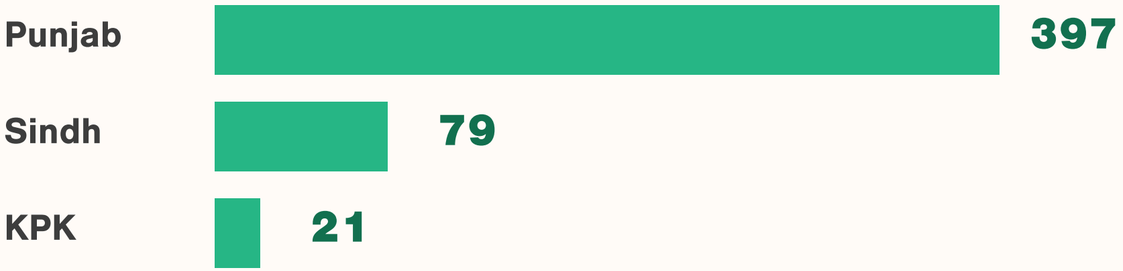
~13–15M tonnes/year (tighter estimate) to ~30M tonnes (broader estimate)

Spread across Rabi and Kharif seasons, not concurrent.

Source: Pakistan Business Council; Express Tribune; rentechdigital facility count (2026); Mordor Intelligence.

WHERE THE CAPACITY ACTUALLY IS

FACILITY DISTRIBUTION



Heavily concentrated and heavily potato-optimized.

MILK PROCESSING

Only ~3% of output processed

Despite Pakistan being the world's 4th-largest milk producer; **10–12 billion litres** wasted annually to poor logistics.

FROZEN FOOD MARKET

USD 0.77–0.81B (2025/26) → USD 1.08B by 2031

At a 5.74% CAGR.

Source: Pakistan Business Council; Express Tribune; rentechdigital facility count (2026); Mordor Intelligence.

WHERE PRODUCTION EXISTS VS. WHERE STORAGE EXISTS

COMMODITY	ANNUAL PRODUCTION	STORAGE / EXPORT REALITY
Potato	Dominant storage crop	Most of Pakistan's 507 cold-storage facilities were built specifically for potato
Citrus (Kinnow)	~2.0–2.4M tonnes	~90–95% grown in Punjab; only 10–12% exported after value addition; CA storage virtually non-existent for citrus
Mango	~1.4–1.8M tonnes (varies by year/source; recent seasons trending lower on climate/water stress)	Only ~8–10% (120–130k tonnes) exported; up to 30% lost orchard-to-consumer per PHDEC

● Source: Selina Wamucii (2025–26 citrus season); IntechOpen Citrus Value Chain Survey; Express Tribune (mango exports); Concave Agri; FreshPlaza; Gulf News (banana boom); Dr. Muhammad Azeem Khan (PHDEC advisor) interview, 2026.

WHERE PRODUCTION EXISTS VS. WHERE STORAGE EXISTS / 2

COMMODITY	ANNUAL PRODUCTION	STORAGE / EXPORT REALITY
Dates	Pakistan is the world's 5th-largest producer (per PHDEC advisor interview)	Imports ~60,000 tonnes from Saudi Arabia at up to 10x the domestic price — traced to poor post-harvest processing
Banana	317,000 tonnes (2024–25, a record high, more than doubled in 15 years)	Growing rapidly; minimal cold-chain-specific infrastructure identified in research to date
Milk / dairy	World's 4th-largest producer	Only 3% processed; 10–12 billion litres wasted annually

● Source: Selina Wamucii (2025–26 citrus season); IntechOpen Citrus Value Chain Survey; Express Tribune (mango exports); Concave Agri; FreshPlaza; Gulf News (banana boom); Dr. Muhammad Azeem Khan (PHDEC advisor) interview, 2026.

Section 03

WHAT'S THE GAP? WHY NOW?

Eight structural gaps — and six tailwinds that arrived in the last twelve months

PAKISTAN'S FAILURE HAS BEEN SCALE AND STRUCTURE — NOT PROOF OF CONCEPT

GAP	CURRENT STATUS
Commodity clustering	Storage is heavily skewed to potato-optimized cold rooms in Punjab; mango, citrus, and dates remain critically underserved despite large production volumes
Refrigerated transport	Minimal reefer trucking penetration; most formal capacity runs through NLC. Domestic reefer container manufacturing does exist (e.g., Koldkraft, Lahore) though underlying refrigeration components are still largely imported; the deeper gap is fleet scale and rural coverage, not manufacturing capability alone
Energy instability	Rural agricultural zones face **12–16 hours** of daily outages, making refrigeration highly reliant on expensive backup generation

◐ Source: Express Tribune; SMEDA Pre-Feasibility Study; Dr. Muhammad Azeem Khan (PHDEC advisor) interview, 2026 — several items in this section are flagged as single-source and not independently corroborated.

STRUCTURAL GAPS / 2

GAP	CURRENT STATUS
Financing structure	Historically fragmented, single-owner facilities financed on personal collateral — which capped how many facilities one owner could finance at once, not asset-class blindness by banks
Technology deficit	CA storage is virtually non-existent commercially; past donor-funded CA attempts failed because they were built at bulk industrial scale, and perishables pulled from a large chamber must sell within 2–3 days or spoil
Port-side storage	No dedicated storage at seaports/airports for produce awaiting customs or lab clearance; a government feasibility study reportedly exists but the facilities remain unbuilt

◐ Source: Express Tribune; SMEDA Pre-Feasibility Study; Dr. Muhammad Azeem Khan (PHDEC advisor) interview, 2026 — several items in this section are flagged as single-source and not independently corroborated.

STRUCTURAL GAPS / 3

PROCESSING UNDERUTILIZATION

Only ~2% of citrus and ~4% of potato output is processed

Even existing processing plants run at just **20–40% capacity utilization**.

QUALITY / COMPLIANCE RISK

Unregulated post-harvest practices have cost buyers

Practices such as date treatment have been linked to recent buyer rejections in export markets like Japan.

◐ Source: Express Tribune; SMEDA Pre-Feasibility Study; Dr. Muhammad Azeem Khan (PHDEC advisor) interview, 2026 — several items in this section are flagged as single-source and not independently corroborated.

WHAT HAS CHANGED — WHY THE RISK IS LOWER NOW

TAILWIND	DETAIL & SOURCE
InfraZamin Agri-Storage Financing Facility (Jun 2026)	**PKR 7.1B** facility — PKR 5B debt + PKR 2.1B equity, backed by a 50% principal credit guarantee with no sovereign guarantee. Targets **300,000+ tonnes** of new capacity within two years. Source: Dawn, Business Recorder, ProPakistani, APP.
CPEC 2.0 Agriculture Investment Conference (Jan 2026)	**~USD 4.5 billion** in MoUs (78–79 signed) between Pakistani and Chinese companies; cold-chain systems named a priority sub-sector. Source: Ministry of National Food Security & Research, South Asia Journal.
FFSAP / IFFSAP financing	SBP facility at **6% p.a.**, up to 10-year tenor with a 2-year grace period; covers up to 65% of civil works (max PKR 500M/project) against 20% minimum equity. Source: Dawn, JS Bank, Bank Alfalah.

● Sources cited inline per row.

WHAT HAS CHANGED / 2

TAILWIND	DETAIL & SOURCE
STPF 2025 zero-duty measure	Zero customs duty on imported refrigeration/cold-chain machinery — though sales tax, withholding, and LC/FX costs still apply, so the effective saving is smaller than the headline suggests.
Industrial tariff relief **(Feb 2026)**	B3 industrial category now averages **~PKR 27/unit** (PKR 23.67 off-peak, PKR 35.68 peak) plus a PKR 1,250/kW/month fixed charge — a genuine, dated reduction in the single largest recurring cost line. Source: Profit, Daily Times, MEPCO.
No dominant domestic operator	**98.6%** of Pakistan's 507 facilities are single-owner, fragmented operations — no large, professionally managed, multi-city cold-chain company has emerged yet. Genuine structural white space.

● Sources cited inline per row.

Section 04

WHY PAKISTAN CAN ENTER THIS

What the technology costs, what buyers require, and the lower-capex entry points

THE TECHNOLOGY — WHAT ACTUALLY WORKS HERE

COMPONENT	DETAIL
Refrigerant choice	Ammonia is the industrial default above ~100 tons of refrigeration — cheapest per kg, running **20–30% cheaper than R22 Freon**, at the cost of mandatory safety engineering due to toxicity. Freon carries lower installation cost and is specified for smaller/medium facilities.
Insulation	Polyisocyanurate (PIR) panels are the engineering default: **PKR 6,500–15,500/m²** depending on thickness (100–150mm).
Building structure	Pre-Engineered Buildings (PEB) are the baseline; Reinforced Concrete (RCC) adds a **35% CAPEX premium** and 6 weeks to lead times.

◐ Source: Izhar Foster; F-Max; Rinac; Phoenixx SmartBuild — cost composition and scale-economics figures are Indian benchmarks applied to the Pakistani context and should be read as directional, not Pakistan-specific.

WHERE THE CAPEX GOES

COST COMPOSITION OF A COLD STORE

30–40%
Refrigeration plant

20–28%
Insulated panels

The remaining third
Civil/site works, electricals, doors/dock, racking, material handling, controls

CA TECHNOLOGY

Runs ~30% above a medium-temperature cold store

Extends apple shelf life to **8–12+ months** against 2–4 months conventional. Standard for KPK apples, Sindh dates, and premium citrus.

SCALE ECONOMICS

A 5,000-tonne facility costs ~35–40% less per tonne than a 500-tonne facility

Small independent operators face a structural cost disadvantage against larger, portfolio-scale builds.

◐ Source: Izhar Foster; F-Max; Rinac; Phoenixx SmartBuild — cost composition and scale-economics figures are Indian benchmarks applied to the Pakistani context and should be read as directional, not Pakistan-specific.

THE BUYER / OFF-TAKER REALITY

Consistency, not just capacity

A single temperature excursion can void a pharma shipment worth **PKR 500M–1.2B** — reliability is the product being sold, not cold space alone.

Certification for export

Markets like Japan require Vapour Heat Treatment (VHT) and formal grading. Very few Pakistani facilities operate at this level — Mahmood Group (Multan) is one cited example.

Crop-specific design

A potato-optimized cold room cannot become an apple or mango facility without redesign — temperature, humidity, airflow, and treatment protocols all differ by crop.

Right-sized, not bulk

Past failed CA projects in Pakistan were oversized and donor-funded; perishables pulled from a large chamber must sell within 2–3 days or spoil. Small, compartmentalized design is what the market can actually absorb.

A new definition of "bankable"

InfraZamin/FFSAP-backed projects are underwritten against cash flows and portfolio structure — a shift from the personal-collateral lending that capped scale in the past.

◐ Source: as cited in sections 3 and 5; VHT and Mahmood Group detail per Dr. Muhammad Azeem Khan (PHDEC advisor) interview, 2026.

THE NEAR-TERM OPPORTUNITY — PRE-COOLING AND VALUE-ADDED PROCESSING

ENTRY POINT 01

Farm-level collection and pre-cooling hubs

A service model charging per crate or per kg — no long-hold storage required, meaningfully lower capex than a standard 3PL cold store, and it addresses the point where deterioration actually begins: within hours of harvest, at field temperatures that can reach **50°C**.

ENTRY POINT 02

Converting perishable to non-perishable

Canning, drying, vacuum packing, and freeze-drying (reportedly new to Pakistan via a university R&D partnership, per the PHDEC advisor interview) sidestep the need for cold storage entirely, since the output holds at room temperature. This also cuts freight cost directly — removing water content can reduce product weight by **~12–13%**.

○ Source: Dr. Muhammad Azeem Khan (PHDEC advisor) interview, 2026 — freeze-drying R&D partnership is single-sourced.

THE NEAR-TERM MARKET AT A GLANCE

MARKET	DETAIL
Buyer	Local traders, processors, small food brands; export buyers for VHT-treated fruit
Product	Pre-cooled/graded produce (collection hub model) or dried/canned/frozen processed goods (value-add route)
Advantage	No full cold-store investment required; faster cash flow; solves the earliest and most severe point of deterioration

Section 05

BUSINESS MODELS & ECONOMICS

Five tiers, CAPEX and OPEX line by line — with every unsourced figure flagged

FIVE-TIER VALUE LADDER

TIER	WHAT YOU DO / SELL	TOTAL CAPEX
Tier 0 **Refrigerated Transport**	Reefer van/truck operator; per-km or per-trip hire connecting farms, hubs, ports	**PKR 200,000 – 1,000,000+**
Tier 1 **Collection & Pre-Cooling Hub**	Small pre-cooling room plus grading/packing; per-crate or per-kg service fee	**PKR 3.5M – 8.0M**
Tier 2 **Standard 3PL Cold Store**	Rent chilled or frozen space by the kilogram-month	**PKR 22M – 35M** 1,000 m³ basis, chiller/freezer
Tier 3 **Controlled-Atmosphere / Export-Grade**	CA storage, VHT, and grading for premium/export crops (apple, mango, citrus, dates)	**~30% above Tier 2 base** plus VHT/certification costs (not separately costed)
Tier 4 **Pharma-Validated Cold Chain**	DRAP-compliant, redundant, monitored cold rooms for pharmaceutical distribution	**25–40% premium** over Tier 2 base

◐ Source: Izhar Foster; SMEDA; F-Max and Indian benchmarks where flagged.

TIER 0 — REFRIGERATED TRANSPORT

Reefer van / truck operator

The asset-light "missing middle" business identified throughout this research — but also the least-costed tier in this deck. No Pakistani source gives a purchase price; every domestic source (Koldkraft, Talal Refrigerated, chiller-van rental operators) quotes rental rates only, set by direct quotation. The figures below are inferred from India and US benchmarks, not sourced from Pakistan.

CAPEX ITEM	COST	BASIS
Small refrigerated van (1.5–2 ton)	**~PKR 195,000 – 345,000**	
Mid-size refrigerated van (12 ft)	**PKR 950,000**	
Van-to-reefer conversion (used van + insulation + unit)	**$10,000 – $20,000 (~PKR 2.8M – 5.6M)**	◐ US benchmark — likely overstates Pakistan cost given lower local labor/fabrication costs
New purpose-built reefer van	**$30,000 – $60,000 (~PKR 8.4M – 16.8M)**	◐ US benchmark — same caveat
Reefer unit alone (new)	**$10,000+ (~PKR 2.8M+)**	◐ US benchmark

○ Source: IndiaMART (refrigerated van listings); Emerald Transportation Solutions; Sunhunk; Koldkraft; Talal Refrigerated Containers; Truck Chiller Van Rental Pakistan — no single Pakistani source gives a purchase price, so this tier combines international benchmarks with an explicit inference flag.

TIER 0 — UNIT ECONOMICS

REVENUE MODEL

Per-km or per-trip hire, or route-based contracts

With processors, exporters, or pharma distributors needing farm-to-hub, hub-to-port, or last-mile cold delivery.

○ Source: Koldkraft; Talal Refrigerated Containers Services; Truck Chiller Van Rental Pakistan — rental rates only, no published unit economics.

TIER 1 — COLLECTION & PRE-COOLING HUB: CAPEX

Assumes a ~40 m³ pre-cooling/blast-chill room serving a single farm cluster.

CAPEX ITEM	ESTIMATED COST (PKR)	BASIS
Insulated room shell (PIR panels, ~72 m² surface)	**470,000 – 1,120,000**	◐ Scaled from sourced PIR panel rate
Refrigeration unit	**800,000 – 1,800,000**	○ Estimated
Grading/sorting/packing tables + equipment	**150,000 – 350,000**	
Reusable crates/bins (initial stock)	**100,000 – 250,000**	
Backup generator (10–20 kVA)	**400,000 – 900,000**	◐ Scaled down from sourced generator range
Voltage stabilizer	**80,000 – 200,000**	◐ Scaled down from sourced range
Land/shed structure	**500,000 – 1,200,000**	Hghly site-dependent
Electrical wiring/installation	**150,000 – 300,000**	
Working capital (initial float)	**200,000 – 500,000**	

○ Source: scaled from SMEDA and Izhar Foster sourced rates where noted; most lines are estimates and not vendor-quoted.

TIER 1 — ANNUAL OPEX & UNIT ECONOMICS

OPEX ITEM (ANNUAL)	ESTIMATED COST (PKR/YEAR)	BASIS
Electricity	**150,000 – 400,000**	
Labor (2–4 staff)	**600,000 – 1,200,000**	○General wage assumption
Diesel backup fuel	**150,000 – 400,000**	Scaled down from a much larger sourced facility
Maintenance	**30,000 – 100,000**	**Sourced 2–4% of equipment value/year — the one clean line**
Packaging consumables	**80,000 – 150,000**	
Transport (farm-to-hub collection)	**100,000 – 300,000**	

○ Source: maintenance rate sourced; all other lines estimated.

TIER 2 — STANDARD 3PL COLD STORE: CAPEX (1,000 M³ BASIS)

CAPEX ITEM	COST	NOTES
Chiller (+0 to +5°C), full facility	PKR 22M – 28M	● Vendor benchmark
Standard Freezer (−18 to −25°C), full facility	PKR 28M – 35M	● Vendor benchmark
Turnkey rate (broad range)	PKR 25,000 – 60,000/m³	Includes civil/electrical variance
Backup generator	PKR 1.5M – 4.0M	● Sourced
Voltage stabilizer	PKR 200,000 – 600,000	● Sourced
Rooftop solar (5 kW, on-grid, no battery)	PKR 554,000 – 780,000	● Sourced; +5–8% for protection equipment
Rooftop solar (20 kW, on-grid, no battery)	PKR 1.8M – 2.0M	● Sourced
RCC vs. PEB premium	+35% CAPEX, +6 weeks lead time	If RCC chosen over PEB baseline

● Source: Izhar Foster (2026 Buyer's Guide / Cost Calculator); CNC Electric (net metering & solar); SMEDA Pre-Feasibility Study.

TIER 2 — ANNUAL OPEX

OPEX ITEM (ANNUAL)	COST	NOTES
Electricity consumption	**50,000 – 80,000 kWh/year**	For a 1,000 m³ freezer
Electricity tariff (post-Feb 2026, B3 category)	**~PKR 27/unit average (PKR 23.67 off-peak, PKR 35.68 peak)**	Plus PKR 1,250/kW/month fixed charge; PKR 50,000/month minimum (B3)
Diesel backup	**~PKR 5.07M/year**	At ~4 hrs/day load-shedding; scales up sharply in 12–16 hr rural zones
Maintenance	**2–4% of equipment value/year**	● Sourced
Finance cost (interest + depreciation)	**~43% of total recurring OPEX**	The single largest recurring line — larger than electricity's ~26% share

● Source: Izhar Foster; NEPRA / MEPCO / checkyourbill.pk tariff data (2026); SMEDA.

TIER 2 — UNIT ECONOMICS

RENTAL YIELD — CHILLED

PKR 6–12

per kg / month

RENTAL YIELD — FROZEN

PKR 9–18

per kg / month

PAYBACK

4–6 years

at 70–85% occupancy — a stabilised rate, not year-round

THE SEASONALITY TRAP



In effect, **7–8 months of rental income has to cover 12 months of operating cost.**

Financing. FFSAP financing is available at 6% p.a., up to a 10-year tenor with a 2-year grace period, covering up to 65% of civil works (max PKR 500M/project) against a 20% minimum equity contribution.

Source: Izhar Foster; Down To Earth (Punjab cold storage seasonality); Dawn / JS Bank / Bank Alfalah (FFSAP terms).

TIER 3 — CONTROLLED-ATMOSPHERE / EXPORT-GRADE

ITEM	COST / DETAIL	NOTES
CA construction premium	**~30% above Tier 2 base**	Gas-tight construction, atmosphere-control equipment
Blast freezer (−40°C)	**PKR 90,000 – 150,000/m³**	Sized by daily throughput, not volume — for seafood/carcass
Shelf-life extension (apple)	**8–12+ months vs. 2–4 months conventional**	The core economic case for CA storage
VHT/grading export facility	**Not costed in any source**	○ Mahmood Group (Multan) is a real cited example, but no public cost figure exists
Export margin (mango, Japan-bound)	**5–6x domestic/lower-value market pricing**	○ Per PHDEC advisor interview — single-source, requires premium treatment, certification, and controlled transport to actually realize

◐ Source: Izhar Foster; Rinac; Metro Refrigeration Industries; Dr. Muhammad Azeem Khan (PHDEC advisor) interview, 2026.

TIER 4 — PHARMA-VALIDATED COLD CHAIN

ITEM	COST / DETAIL	NOTES
Construction premium	**25–40% above standard construction**	Covers validation, redundancy, alarm logging, DRAP-compliant monitoring
Risk exposure per excursion	**PKR 500M – 1.2B in product value**	The basis for the tier's premium margin
Demand driver	**DRAP enforcement tightened every year since 2020**	A regulation-backed demand floor, independent of the agri-export story

Source: DRAP enforcement record; Izhar Foster; pharma distribution benchmarks as cited in Section 4.

Section 06

WHO SHOULD ENTER?

Six profiles, the tier that fits each, and the one entry to avoid

WHO SHOULD ENTER

PROFILE	WHY THIS FITS	BEST TIER
Farm-cluster operator / aggregator near production zones	Solves the earliest deterioration point; lowest-capex entry; accessible to first-time entrepreneurs	**Tier 1**
Well-capitalized entrant building multi-site presence	98.6% of facilities are single-owner and fragmented — no large professional multi-city operator exists yet; InfraZamin's structure is sized for exactly this	**Tier 2** (portfolio scale)
Export trader / processor with an achievable buyer relationship **(mango, kinnow, dates)**	Kenya precedent: build around a bankable offtake contract, not ahead of demand; underserved premium-crop segment	**Tier 3**

◐ Source: synthesis of Sections 3–5; InfraZamin structure per Dawn / Business Recorder (Jun 2026).

WHO SHOULD ENTER / 2

PROFILE	WHY THIS FITS	BEST TIER
Pharma distributor, hospital network, or EPI/vaccine contractor	DRAP enforcement has tightened every year since 2020 — a regulation-backed demand floor independent of agri-export dynamics	**Tier 4**
Developer / SME with strong bankability, limited own capital	Early-mover access to InfraZamin's guarantee structure or FFSAP financing before it's fully subscribed	**Any tier, financing-first**
NGO / cooperative or provincial development body	SEDF-style markup subsidy model; could replicate the node-and-hub aggregation model for smallholder clusters	**Tier 1 co-op**

WEAKEST FIT

An undercapitalized entrant building another potato-optimized medium-temperature chiller

This is the most saturated segment in the market, competing on the thinnest margin tier against 500+ existing small operators with no differentiation.

◐ Source: synthesis of Sections 3–5; SEDF Storage & Cold Chain success stories.

LOCAL SIGNALS — IT IS ALREADY HAPPENING (AT SMALL SCALE)

PERSON / INSTITUTION	WHAT THEY'VE DONE	WHY IT MATTERS
Fauji Fresh n Freeze (FFFL)	Pakistan's first IQF pioneer; 70%+ share in domestic French fries/frozen vegetables; uses rooftop solar	**Proves the integrated freezing + processed-food model works at scale**
Hamza Brothers Impex	Modern CA facility, 1,100-ton monthly capacity, premium fruit exports to Japan	**Proves the CA export model works**
Kevlaar & Family Cold Storage	Node-and-hub model: collection/grading centers (e.g., Tando Allahyar) pre-process before reefer transport to central storage	**Proves the aggregation-hub model (Tier 1) at a working scale**
Maersk Pakistan	Integrated citrus cold chain — transport, tracking, shipping; ~25% of the citrus export market	**Proves the logistics-integration model**

Source: FFFL company profile; Maersk (cold chain solutions for Pakistan's citrus exporters); SEDF Storage & Cold Chain success stories.

LOCAL SIGNALS / 2

PERSON / INSTITUTION	WHAT THEY'VE DONE	WHY IT MATTERS
Mahmood Group **(Kabirwala, Multan)**	Mango grading, washing, and VHT facility enabling premium exports including to Japan	**Per PHDEC advisor interview — a concrete Tier 3 example**
Pakistan Green Development Corporation (PGDC)	Public-private cold storage across ~5 sites in Balochistan, D.I. Khan, and Skardu, ~1,000 tonnes/site	**Per PHDEC advisor interview — an emerging public-private model**

These companies prove the opportunity is real. But no large, professionally managed, multi-city cold-chain operator has emerged in Pakistan yet.

The market remains fragmented — and that fragmentation is itself the white space.

○ Source: Dr. Muhammad Azeem Khan (PHDEC advisor) interview, 2026 — both rows single-sourced.

Section 07

USEFUL RESOURCES

Thirty-seven sources, including one primary interview

USEFUL RESOURCES 1–14

01 Pakistan Business Council — *The Missing Link: Building Pakistan's Cold Chain*

02 Mordor Intelligence — *Pakistan Frozen Food Market*

03 The Express Tribune — *Storage fund dwarfed by farm losses*

04 The Express Tribune — *40% post-harvest losses hit growers*

05 Times of Agriculture — *Post-Harvest Losses in Pakistan Guide*

06 SMEDA — *Pre-Feasibility Study: Compartmentalized Cold Storage*

07 Izhar Foster — *Cold Storage Cost Pakistan 2026 Buyer's Guide / Cost Calculator / 2026 Market Outlook*

08 F-Max — *Cold Storage India Cost: CapEx & OpEx Real Numbers*

09 Rinac — *Cold Storage Warehouse Guide 2026*

10 Phoenixx SmartBuild — *Cold Storage Construction Cost India 2026*

11 Metro Refrigeration Industries — *Cold Storage Types, Cost & Refrigeration Systems*

12 Refrigerated Truck Rental Pakistan — *Reefer Trailer Rental*

13 CNC Electric — *Net Metering Pakistan 2026: NEPRA Rules & Cost Guide*

14 Dawn — *Task force to boost financing for agri warehousing* (FFSAP terms)

USEFUL RESOURCES 15–28

15 JS Bank / Bank Alfalah — FFSAP Scheme documentation

16 Indian Potato — *How to Build a Potato Cold Store* (benchmark)

17 APICOL / SMEDA — 5,000 MT Cold Storage Model DPR

18 Down To Earth — *Punjab's cold storage owners struggle to stay in business*

19 Profit / Daily Times / MEPCO — Industrial electricity tariff cuts, Feb 2026

20 NEPRA — Incremental Consumption Package; net metering to net billing transition

21 checkyourbill.pk — *Electricity Tariff Rates Pakistan 2026*

22 Sindh Enterprise Development Fund (SEDF) — *Storage & Cold Chain Success Stories*

23 Fauji Fresh n Freeze Limited (FFFL) — company profile

24 Maersk — *Cold chain solutions for Pakistan's citrus exporters*

25 State Bank of Pakistan — IFFSAP Scheme; Bank AL Habib — SBP Refinance Scheme

26 Dawn / Business Recorder / ProPakistani / APP / Pakistan Today — InfraZamin facility launch coverage, June 2026

27 Ministry of National Food Security & Research; South Asia Journal — CPEC 2.0 Agriculture Investment Conference, Jan 2026

28 MarketsandMarkets / Mordor Intelligence / Grand View Research / Fortune Business Insights — Global Cold Chain Market, 2026

USEFUL RESOURCES 29–37

29 Dr. Muhammad Azeem Khan (PHDEC advisor) — direct interview, 2026

30 Selina Wamucii — Pakistan citrus season 2025–26 export data

31 IntechOpen — *Citrus Value Chain(s): A Survey of Pakistan Citrus Industry*

32 Express Tribune / Concave Agri / FreshPlaza / Tridge — Pakistan mango production & export data, 2025–26

33 Gulf News — *Pakistan's banana boom*, 2024–25

34 IndiaMART — Refrigerated Van listings (Tier 0 CAPEX benchmark)

35 Emerald Transportation Solutions; Sunhunk — Refrigerated vehicle/reefer trailer cost guides (US benchmark)

36 Koldkraft — Reefer Containers Manufacturer in Pakistan

37 Talal Refrigerated Containers Services; Truck Chiller Van Rental Pakistan — Pakistani reefer rental market

Full source list also published at pakistanandcounting.com/resources.

accelerate prosperity

german cooperation
DEUTSCHE ZUSAMMENARBEIT

KFW

UNLOCKING GROWTH

SEASON 04

Pakistan grows enough to feed itself twice over — and loses a fifth of it before it ever reaches a buyer.

The demand is proven. The financing has finally arrived. The system is still missing.

pakistanandcounting.com/resources

Unlocking Growth series produced by Pakistan & Counting with Accelerate Prosperity, funded by BMZ (Federal Ministry for Economic Cooperation and Development) through KfW (Kreditanstalt für Wiederaufbau).

The views expressed in this publication are those of the authors (Pakistan and Counting) and do not necessarily reflect the views of the Federal Ministry for Economic Cooperation and Development (Germany), KfW Development Bank, or Accelerate Prosperity.

PAKISTAN &COUNTING