

# **PROFESSIONAL ECONOMIC AND FINANCIAL PRE-FEASIBILITY REPORT**

## **EXTRUDED BALANCED PROTEIN FOODS PLANT**

**Company under formation**  
**“LABORATORY OF THE WORLD FOODS & NUTRITION S.A.”**

Argentina | Modular strategy: 30,000 → 65,000 metric tons/year  
Regional comparison: Greater Rosario · Córdoba · Tucumán

**Personalized for Ruperto Bravo Benavente**

Updated September 2026 | US English edition

SCOPE

# Professional Notice and Scope

**PURPOSE**

This document is an investment pre-feasibility study. It is not basic or detailed engineering, a binding quotation, appraisal, sanitary opinion, or tax advice. Values must be confirmed through supplier RFQs, supply and offtake contracts, site studies, utility letters, logistics analysis, and permits.

The starting source is the 2020 Extruded Balanced Feed Plant Project. Its business vision, proposed product families, and final scale have been retained. The former single-stage plant with a privately owned Paraná River port has been replaced by a modular development that uses existing logistics infrastructure. Financial amounts are stated in constant 2026 US dollars, excluding VAT and financing unless noted.

| Workstream | Appropriate use                                                | Limitation                                                 |
|------------|----------------------------------------------------------------|------------------------------------------------------------|
| Market     | Size the opportunity and prioritize segments.                  | Does not replace customer interviews or letters of intent. |
| Technical  | Define process blocks, areas, capacities, and design criteria. | Conceptual until FEED and local permits.                   |
| Financial  | Compare scenarios and sensitivities.                           | Class 4 CAPEX estimate, approximately ±30%.                |
| Decision   | Set investment gates and conditions precedent.                 | Does not authorize full construction spending.             |

INVESTMENT DECISION

# Executive Summary

The project can be economically attractive if it is implemented in two phases, concentrates on higher-margin human-food ingredients and specialized animal nutrition, and makes the second expansion conditional on contracted demand. Argentina offers a powerful grain and oilseed base, but value creation depends on formulation, extrusion performance, food safety, logistics, and recurring sales.

| Variable  | Updated proposal                                                | Investment gate                                                 |
|-----------|-----------------------------------------------------------------|-----------------------------------------------------------------|
| Phase 1   | 30,000 t/y; segregated human line plus flexible animal line.    | At least 60% of capacity contracted before financial close.     |
| Phase 2   | Expansion to 65,000 t/y from operating year 5.                  | At least 80% utilization and positive EBITDA.                   |
| Location  | Greater Rosario preferred; Córdoba second; Tucumán conditional. | Verified power, gas, water, EIA, road/rail and port service.    |
| CAPEX     | USD 31–45M phase 1 plus USD 18.6–28.5M phase 2.                 | Three competitive quotations and ≥15% contingency.              |
| Base case | Indicative real IRR 15.3%; NPV at 14% USD 3.34M.                | Reprice or redesign if return falls below risk-adjusted hurdle. |

RECOMMENDATION

Authorize a 16-week site-and-market validation stage. Do not acquire land or major equipment before utility feasibility, critical permit screening, pilot trials, and letters of intent covering at least 18,000 metric tons per year.

## 2026 UPDATE

# What Changed Since the 2020 Project

| Topic      | 2020 approach                         | 2026 approach                                                   |
|------------|---------------------------------------|-----------------------------------------------------------------|
| Geography  | Colombia, Argentina, or Brazil.       | Argentina; compare Greater Rosario, Córdoba, and Tucumán.       |
| Capacity   | 64,188 t/y from one integrated plant. | 30,000 t/y first; modular growth to 65,000.                     |
| Port       | Private port: USD 28M.                | Existing terminals and contracted logistics.                    |
| Investment | USD 62.67M historical estimate.       | Class 4 ranges and explicit contingency.                        |
| Market     | Broad public programs and exports.    | Priority segments, offtake, quality, and destination approvals. |
| Finance    | 9% debt, 10 years; IRR 13.43%.        | Unlevered real cash flow; 12–18% discount range.                |
| Quality    | General description.                  | HACCP, ISO/FSSC, allergens, traceability, segregation.          |

The historical cost cannot be updated by inflation alone. Imported process equipment, local construction, utilities, freight, foreign exchange, and regulations have moved differently. The new estimate is therefore organized as procurement packages to support current quotations.

## MARKET 2026

# Global Market and Strategic Opportunity

The 2026 Alltech Agri-Food Outlook estimates that world compound-feed output increased 2.9% in 2025 to about 1.44 billion metric tons. Latin America remains a major producing region, while aquaculture feed returned to stronger growth. The scale confirms a substantial addressable market, but it does not prove demand for a new facility: entry depends on product performance, delivered price, certification, and channel access.

| Segment                     | Attractiveness                       | Core requirement                                             | Priority |
|-----------------------------|--------------------------------------|--------------------------------------------------------------|----------|
| Textured plant protein B2B  | Higher value and export potential.   | Stable texture, color, hydration, protein, allergen control. | 1        |
| Fortified human-food blends | Institutional and nutrition demand.  | CAA compliance, registrations, micronutrient control.        | 2        |
| Pet food and treats         | Premiumization and regional brands.  | Palatability, safety, formulation, channel.                  | 2        |
| Aquaculture feed            | Extrusion-dependent growing segment. | Floatability, water stability, digestibility.                | 2        |
| Mass-market feed            | Large volume.                        | Cost leadership and customer proximity.                      | 3        |
| Retail snacks               | High unit value.                     | Brand, distribution, innovation, working capital.            | Pilot    |

SUPPLY

# Argentina’s Raw-Material Platform

For crop year 2025/26, the Buenos Aires Grain Exchange reported approximately 64.0 million metric tons of corn and 50.1 million metric tons of soybeans. National availability is far above project requirements. The real supply risks are delivered cost, seasonality, quality, segregation, mycotoxins, and volatility in protein meals and oils.

| Input               | Role                                    | Sourcing strategy                                         | Key controls                                         |
|---------------------|-----------------------------------------|-----------------------------------------------------------|------------------------------------------------------|
| Soy meal / expeller | Primary protein source.                 | Index formula plus logistics differential; 2–3 suppliers. | Protein, urease, solubility, salmonella, GMO status. |
| Corn                | Starch, expansion, and energy.          | Staggered purchases, hedging, buffer storage.             | Moisture, mycotoxins, particle size.                 |
| Rice / pulses       | Texture, digestibility, product claims. | Crop contracts and specifications.                        | Broken grain, allergens, residues.                   |
| Oils / flavors      | Palatability and energy density.        | Indexed formula; segregated tanks.                        | Oxidation, dosing, traceability.                     |
| Vitamins / minerals | Fortification.                          | Approved suppliers and safety stock.                      | Potency, stability, certificate of analysis.         |

The World Bank Pink Sheet for September 2026 shows soybean meal near USD 403/t in its international reference series. The actual Argentine plant-delivered cost will differ by specification, processing, taxes, freight, and terms. It is used only as a scenario anchor, not as a purchase quotation.

## COMMERCIAL STRATEGY

# Recommended Product Portfolio

| Family                     | Format                                      | Target customer                           | Phase 1 share |
|----------------------------|---------------------------------------------|-------------------------------------------|---------------|
| Textured vegetable protein | Dry, controlled sizes and colors.           | Food processors, food service, exporters. | 35%           |
| Fortified human-food bases | Instant flours, soups, and blends.          | Nutrition programs and private labels.    | 20%           |
| Pet food / treats          | Finished dry products or B2B intermediates. | Regional brands and retail chains.        | 20%           |
| Aquaculture feed           | Floating or sinking pellets.                | Producers and distributors.               | 10%           |
| Specialty feed             | Poultry, swine, and calves.                 | Regional integrators.                     | 10%           |
| R&D / toll manufacturing   | Pilot and contract batches.                 | Startups, universities, SMEs.             | 5%            |

This mix deliberately differs from a conventional commodity-feed mill. It is designed to support the average selling price and margin required for quality systems, application development, certification, and export sales. Each SKU must have a technical specification, standard cost, minimum batch, shelf life, packaging specification, and approved destination market.

## GO-TO-MARKET

## Market Access and Competitive Position

Relevant competitors include oilseed processors with captive soy meal, integrated feed manufacturers, B2B extruders, pet-food manufacturers, and international TVP suppliers. Buying an extruder is not the main barrier; the durable capabilities are formulation, stable operation, drying, flavor, food safety, and repeat sales.

| Channel            | Value proposition                             | Commercial condition                             | Primary risk                     |
|--------------------|-----------------------------------------------|--------------------------------------------------|----------------------------------|
| Human-food B2B     | Consistent, traceable, adaptable ingredients. | 6–12 month contracts and specification control.  | Long qualification cycle.        |
| Private label      | Finished product without customer CAPEX.      | MOQ, advance payment, formulation ownership.     | Customer concentration.          |
| Institutional      | Fortified nutrition at competitive cost.      | Tender compliance and scheduled deliveries.      | Payment and policy risk.         |
| Regional export    | FOB/CFR documentation and certification.      | Anchor importer or distributor.                  | Country-by-country registration. |
| Toll manufacturing | Capacity utilization and learning.            | Reserved capacity plus cleaning/changeover fees. | Cross-contamination.             |

### COMMERCIAL DISCIPLINE

Before financial close: letters of intent for at least 18,000 t/y, no customer above 25% of sales, contribution-margin floor by SKU, and contractual pass-through of extraordinary raw-material movements.

ARGENTINA

Regional Location Comparison

| Criterion (weight)            | Greater Rosario          | Córdoba                | Tucumán                |
|-------------------------------|--------------------------|------------------------|------------------------|
| Raw materials (25%)           | 5 - soybean/corn cluster | 4 - corn and feed base | 3 - longer soy freight |
| Exports (20%)                 | 5 - Paraná terminals     | 3 - inland transfer    | 2 - long port distance |
| Industrial market (15%)       | 5                        | 4                      | 3                      |
| Utilities (15%)               | 4                        | 4                      | 3 - site verification  |
| Land/cost (10%)               | 3                        | 4                      | 4                      |
| Skills/suppliers (10%)        | 5                        | 4                      | 3                      |
| Regional diversification (5%) | 3                        | 4                      | 5                      |
| Weighted score                | 4.55 / 5                 | 3.85 / 5               | 3.05 / 5               |

Greater Rosario ranks first because of its industrial ecosystem, inbound raw materials, and export logistics. Córdoba is a strong second option for feed, pet food, and central domestic markets. Tucumán can support regional development and serve northwestern Argentina, but must demonstrate a commercial, utility, rail, or incentive advantage sufficient to offset logistics.

## LOCATION

# Site Due-Diligence Criteria

| Block                | Minimum requirement                                   | Evidence                                    |
|----------------------|-------------------------------------------------------|---------------------------------------------|
| Land use             | Food manufacturing and heavy traffic permitted.       | Municipal certificate and applicable rules. |
| Area                 | 4–6 ha for phase 1 plus protected expansion land.     | Survey, title, easements.                   |
| Power                | Firm capacity and motor/VFD power quality.            | Utility feasibility letter and tariff.      |
| Gas / heat           | Firm gas or dual-fuel alternative.                    | Capacity, pressure, and cost.               |
| Water                | Potable/process quality and adequate flow.            | Analysis, permit, water balance.            |
| Effluent             | Discharge or treatment solution.                      | Characterization and authorization.         |
| Logistics            | Truck access; preferred rail/port node within 100 km. | Routes, tolls, transit time, tariff.        |
| Environmental/social | No incompatible sensitive receptors.                  | Baseline, EIA screening, engagement.        |

CONCEPT ENGINEERING

Proposed Manufacturing Process

| Stage                | Function                               | Critical control                            |
|----------------------|----------------------------------------|---------------------------------------------|
| Receiving and hold   | Weigh, sample, unload, and quarantine. | Identity, mycotoxins, foreign material.     |
| Cleaning and milling | Prepare uniform raw materials.         | Combustible dust and particle size.         |
| Dosing and mixing    | Execute formulations and premixes.     | Accuracy, sequence, allergens.              |
| Preconditioning      | Add water/steam and raise temperature. | Moisture, time, temperature.                |
| HTST extrusion       | Cook, texture, and shape.              | SME, pressure, temperature, residence time. |
| Drying and cooling   | Stabilize moisture and water activity. | Uniformity, aw, thermal efficiency.         |
| Coating              | Apply oils, flavors, and actives.      | Dosing, oxidation, uniformity.              |
| Packing and release  | Protect, code, and approve each lot.   | Metal, weight, seal, FEFO.                  |

Twin-screw extrusion is preferred for human-food products because it offers ingredient flexibility and tighter control of mechanical energy and texture. Some feed products can use lower-cost single-screw systems. The final selection must follow pilot trials with Argentine ingredients and target specifications.

## TWO PHASES

# Capacity and Operating Basis

| Parameter                 | Phase 1                    | Phase 2           |
|---------------------------|----------------------------|-------------------|
| Annual nameplate capacity | 30,000 t                   | 65,000 t          |
| Operating days            | 330                        | 330               |
| Operating hours/day       | 20–22                      | 20–22             |
| Effective hourly rate     | 4.1–4.6 t/h                | 8.9–9.8 t/h       |
| Process lines             | 2 modular lines            | 3–4 modular lines |
| Target utilization        | 80–95%                     | 85–95%            |
| Target OEE                | ≥70% at start; ≥78% mature | ≥80%              |

The update replaces the historical assumption of 360 operating days and four six-hour shifts. Planned maintenance, sanitation, product changes, validation, and cleaning require protected downtime. Saleable capacity must be calculated from OEE and the actual SKU mix, not from extruder nameplate throughput alone.

FACILITY FLOW

# Conceptual Layout and Hygienic Zoning

The plant follows a one-way material flow from receiving to dispatch, with personnel circulation separated from truck traffic and physical segregation between human-food and animal-feed operations. The master plan must reserve expansion zones for silos, extrusion, drying, and packaging so phase 2 can be installed without compromising clean operations.

| Zone                 | Hygiene/pressure                                       | Segregation principle                                 |
|----------------------|--------------------------------------------------------|-------------------------------------------------------|
| Receiving/silos      | Dusty; local extraction.                               | Quarantine, approved, rejected, and allergens.        |
| Human-food process   | Controlled hygiene; positive pressure where justified. | Dedicated people, tools, air, and rework.             |
| Animal-feed process  | GMP and SENASA controls.                               | Species/formula separation; medication if applicable. |
| Human-food packaging | High protection of exposed product.                    | Approved materials and metal control.                 |
| Utilities/waste      | Independent technical access.                          | No crossing with finished product.                    |

**SEPARATE DELIVERABLE**

The English conceptual layout infographic is supplied as a standalone A3 landscape PDF for technical review and presentations.

## PROCUREMENT

# Main Equipment Packages

| Package          | Components                                        | RFQ requirement                              |
|------------------|---------------------------------------------------|----------------------------------------------|
| Receiving        | Hoppers, conveying, magnet, aspiration, sampling. | Guaranteed capacity and dust control.        |
| Preparation      | Cleaner, mills, screens, micro-dosing.            | Particle-size and dosing accuracy.           |
| Human extrusion  | Preconditioner, twin screw, dies, cutter.         | Acceptance trial with target recipes.        |
| Animal extrusion | Single/twin screw according to mix.               | Floatability, density, specific energy.      |
| Thermal          | Dryer, cooler, boiler/thermal fluid.              | Guaranteed energy per ton and heat recovery. |
| Finishing        | Coater, bagging, palletizing, metal detector.     | Accuracy, seal integrity, rapid changeover.  |
| Automation       | PLC/SCADA, recipes, traceability, OEE.            | Cybersecurity, historian, local support.     |
| Laboratory       | NIR, moisture/aw, microbiology, texture.          | Validated methods and calibration.           |

COMPLIANCE

# Quality, Food Safety, and Certification

The human-food line must comply with the Argentine Food Code and applicable establishment and product registrations, supported by GMP, HACCP, and a management system aligned with ISO 22000 or FSSC 22000. Animal-feed establishments and products require SENASA registration, technical direction, and inspection procedures.

| Program            | Minimum content                                            | Timing                            |
|--------------------|------------------------------------------------------------|-----------------------------------|
| PRPs/GMP           | Buildings, cleaning, pests, water, suppliers, maintenance. | Before commissioning.             |
| HACCP              | Hazards, CCP/OPRP, limits, monitoring, validation.         | During basic engineering.         |
| Allergens          | Soy, milk, wheat, and campaign/changeover control.         | Layout and production sequencing. |
| Traceability       | One step back/forward and mock recall.                     | ERP/MES from phase 1.             |
| Food defense/fraud | Access, authenticity, vulnerability.                       | Before export.                    |
| Certification      | FSSC 22000/BRCGS; GMP+ where market requires.              | Customer-driven.                  |

## LICENSE TO OPERATE

## Environment, Safety, and Sustainability

Argentina's General Environmental Law requires prior assessment when a project may significantly affect the environment. The selected province and municipality will determine categorization, impact study, participation, emissions, effluent, waste, fire approval, and industrial permitting requirements.

| Aspect         | Risk                                    | Design response                                     |
|----------------|-----------------------------------------|-----------------------------------------------------|
| Grain dust     | Explosion, fire, and exposure.          | Dust collection, grounding, isolation/venting, DHA. |
| Noise          | Mills, fans, compressors.               | Enclosures, silencers, dosimetry.                   |
| Thermal energy | Emissions and cost.                     | Efficient burners, economizer, heat recovery.       |
| Water/effluent | Cleaning and utilities.                 | Dry cleaning first; segregation and treatment.      |
| Waste          | Sweepings, rejected product, packaging. | Safe recovery and disposal traceability.            |
| Machine safety | Entanglement and maintenance.           | Guards, interlocks, LOTO, hygienic access.          |

## OPERATING MODEL

# Organization and Staffing

| Function                  | Phase 1 | Phase 2 | Comment                                         |
|---------------------------|---------|---------|-------------------------------------------------|
| Production/packaging      | 55–75   | 105–135 | Automation and shift pattern drive the range.   |
| Quality/R&D/regulatory    | 12–16   | 18–24   | Human/animal segregation and applications.      |
| Maintenance/utilities     | 12–16   | 20–28   | Predictive, electrical, mechanical, automation. |
| Logistics/warehousing     | 18–25   | 30–42   | Partial outsourcing possible.                   |
| Commercial/administration | 15–22   | 25–35   | Export, procurement, finance, IT.               |
| Estimated direct total    | 112–154 | 198–264 | Validate by layout, shifts, outsourcing.        |

The 237-person total in the 2020 study can be plausible at 65,000 t/y with a broad SKU mix, intensive packing, and continuous operation, but it should not be transferred to phase 1. Staffing must be built position by position, including relief, leave, training, collective agreements, and full employer cost.

## CLASS 4 CAPEX

## Updated Capital Investment

| Package                         | Phase 1 USD M | Phase 2 USD M | Range note                       |
|---------------------------------|---------------|---------------|----------------------------------|
| Land and preparation            | 2.0–4.0       | 0.3–1.0       | Purchase or industrial park.     |
| Civil works/buildings           | 8.0–12.0      | 3.0–5.0       | Includes hygienic segregation.   |
| Process/packaging               | 11.0–15.0     | 10.0–14.0     | Imported and domestic equipment. |
| Utilities/electrical/automation | 4.0–6.0       | 2.5–4.0       | Power, steam, air, SCADA.        |
| Laboratory/engineering/permits  | 2.0–3.0       | 0.8–1.5       | Engineering, QA, validation.     |
| Contingency                     | 4.0–5.0       | 2.0–3.0       | At least 15% until firm RFQ.     |
| Indicative total                | 31–45         | 18.6–28.5     | Financial base: 34 + 22.         |

The USD 28 million private port included in 2020 is excluded. At 65,000 t/y, the project should first compare terminal fees, bonded storage, containers, and barges. A dedicated berth should only return to scope if a separate logistics business case proves additional third-party volume and feasible permitting.

CONSTANT 2026 USD

# Financial Assumptions

| Assumption                | Base        | Downside   | Upside      |
|---------------------------|-------------|------------|-------------|
| Net average selling price | USD 1,120/t | USD 950/t  | USD 1,250/t |
| Variable cost             | USD 650/t   | USD 720/t  | USD 590/t   |
| Mature volume             | 65,000 t/y  | 52,000 t/y | 65,000 t/y  |
| Mature fixed costs        | USD 7.5M/y  | USD 8.3M/y | USD 7.0M/y  |
| Base total CAPEX          | USD 56M     | USD 65M    | USD 50M     |
| Real discount rate        | 14%         | 18%        | 12%         |
| Illustrative tax rate     | 35%         | 35%        | 35%         |

The base selling price assumes a premium B2B mix and is not suitable for a portfolio dominated by commodity feed. Variable cost includes ingredients, packaging, variable energy, internal logistics, consumables, and yield loss. Cash flows exclude VAT, origin-specific duties, debt, subsidies, and unconfirmed incentives.

## BASE CASE

# Indicative Financial Projection

| Operating year | Volume t/y | Revenue USD M | EBITDA USD M | Indicative FCF USD M |
|----------------|------------|---------------|--------------|----------------------|
| 1              | 12,000     | 13.4          | 0.5          | -4.1                 |
| 2              | 22,500     | 25.2          | 4.3          | 1.2                  |
| 3              | 28,500     | 31.9          | 8.6          | 5.7                  |
| 4              | 30,000     | 33.6          | 8.7          | -15.5                |
| 5              | 42,000     | 47.0          | 13.4         | 7.6                  |
| 6              | 55,000     | 61.6          | 19.1         | 11.7                 |
| 7              | 61,000     | 68.3          | 21.5         | 13.4                 |
| 8              | 65,000     | 72.8          | 23.1         | 14.3                 |
| 9–12           | 65,000     | 72.8          | 22.7–23.0    | 14.1–25.0            |

Under the stated assumptions, the base case yields an indicative 15.3% real unlevered IRR and USD 3.34 million NPV at a 14% real discount rate. This is a coherence test, not a closed valuation. Debt may enhance or destroy equity returns depending on pricing, grace period, currency, amortization, security, and covenants.

## FINANCIAL RISK

## Sensitivity and Break-Even

| Price / variable cost | USD 590/t | USD 620/t | USD 650/t | USD 680/t | USD 720/t |
|-----------------------|-----------|-----------|-----------|-----------|-----------|
| USD 950/t             | -8.5      | -12.9     | -17.4     | -21.8     | -27.7     |
| USD 1,030/t           | 3.3       | -1.1      | -5.6      | -10.0     | -15.9     |
| USD 1,120/t           | 16.6      | 12.2      | 7.7       | 3.3       | -2.6      |
| USD 1,180/t           | 25.5      | 21.0      | 16.6      | 12.2      | 6.3       |
| USD 1,250/t           | 35.8      | 31.4      | 27.0      | 22.5      | 16.6      |

Table values are indicative NPV in USD millions at 14%. The project is more sensitive to contribution margin and utilization than to a modest CAPEX saving. With mature fixed costs of USD 7.5 million and a USD 470/t contribution margin, operating break-even is about 16,000 t/y before depreciation, tax, and debt service.

## CAPITAL STRUCTURE

# Financing Principles

| Source                  | Target range      | Condition                                                                 |
|-------------------------|-------------------|---------------------------------------------------------------------------|
| Sponsor/investor equity | 35–45%            | Fund development, equity portion, and contingency.                        |
| Long-term debt          | 40–50%            | Currency aligned with sales; construction grace; DSCR $\geq 1.35\times$ . |
| Leasing/vendor finance  | 5–15%             | Identifiable equipment and supplier support.                              |
| Working capital line    | Separate facility | Inventory, export cycle, receivables.                                     |
| Incentives              | Confirmed only    | RIGI general floor is USD 200M; assess RIMI/provincial rules.             |

The Central Bank of Argentina August 2026 market survey projected a December 2026 TAMAR rate of 23.45% nominal and ARS 1,630 per US dollar. These inputs support local budgeting and peso-debt scenarios, but the project must model the currency mismatch among sales, ingredients, payroll, taxes, and debt.

## RISK REGISTER

## Principal Risks and Mitigation

| Risk                           | Likelihood | Impact   | Mitigation                                                |
|--------------------------------|------------|----------|-----------------------------------------------------------|
| Commodity-heavy mix            | High       | High     | Premium B2B offers, offtake, SKU margin floors.           |
| Soy/corn volatility            | High       | High     | Indexed formulas, hedging, inventory, multiple suppliers. |
| Underutilization               | Med-high   | High     | Phase 1, toll manufacturing, expansion gates.             |
| CAPEX/import exposure          | High       | High     | Competitive RFQ, contingency, FX protection.              |
| Food safety/allergens          | Medium     | Critical | Hygienic design, segregation, HACCP, recall.              |
| Power/gas availability         | Medium     | High     | Utility letters, dual fuel, energy efficiency.            |
| Permits                        | Medium     | High     | Site-specific regulatory route before purchase.           |
| Customer/country concentration | Medium     | High     | No customer >25%; multiple destinations.                  |
| Combustible dust               | Medium     | Critical | DHA, explosion protection, housekeeping.                  |

INVESTMENT GATES

Implementation Roadmap

| Stage                          | Duration     | Deliverables                                     | Gate                           |
|--------------------------------|--------------|--------------------------------------------------|--------------------------------|
| 0. Preparation                 | 0–4 weeks    | Data room, team, criteria, NDA.                  | Mandate and budget.            |
| 1. Site/market pre-feasibility | 5–16 weeks   | Sites, offtake, pilots, utilities, ROM RFQ.      | ≥18,000 t/y LOIs; viable site. |
| 2. Basic engineering / FEED    | 4–7 months   | PFD/P&ID, layout, EIA, CAPEX ±15–20%, HAZOP/DHA. | Returns and critical permits.  |
| 3. Financial close             | 2–4 months   | EPC, debt, insurance, contracts.                 | Notice to proceed.             |
| 4. Phase 1 construction        | 14–20 months | Civil, installation, FAT/SAT, training.          | Performance test.              |
| 5. Ramp-up                     | 6–12 months  | OEE, quality, sales, guaranteed costs.           | ≥80% sustained utilization.    |
| 6. Expansion                   | 12–16 months | Phase 2 without stopping operations.             | 65,000 t/y capacity.           |

## GOVERNANCE

# Board Performance Dashboard

| Dimension       | KPI                             | Mature target                             |
|-----------------|---------------------------------|-------------------------------------------|
| Commercial      | Contracted volume / capacity    | ≥70% for next 12 months                   |
| Commercial      | Contribution margin per ton     | ≥USD 350/t; base plan higher              |
| Operations      | Overall equipment effectiveness | ≥80%                                      |
| Quality         | First-pass release              | ≥98%                                      |
| Quality         | Complaints per 1,000 t          | Declining trend; zero critical            |
| Energy          | kWh and GJ per ton              | Supplier benchmark and annual improvement |
| Yield           | Non-saleable mass loss          | ≤1.5%                                     |
| Finance         | Debt-service coverage ratio     | ≥1.35x                                    |
| Working capital | Cash conversion cycle           | ≤60 days                                  |
| Safety          | Lost-time injuries              | Zero                                      |

PRE-FEASIBILITY OPINION

# Final Conclusions and Recommendation

The plant has a sound agro-industrial and technical basis, but viability does not follow automatically from Argentina’s soybean and corn abundance. It depends on transforming that advantage into differentiated products, contracted demand, stable operations, export-grade quality, and disciplined capital allocation.

| Conclusion | Assessment                                                                            |
|------------|---------------------------------------------------------------------------------------|
| Market     | Favorable but conditional; demand must be demonstrated by SKU and customer.           |
| Technical  | Feasible with available technology; requires human/animal segregation and pilot work. |
| Location   | Greater Rosario leads; Córdoba second; Tucumán requires compensating advantage.       |
| Financial  | Attractive only with value-added mix and staged execution; commodity case is weak.    |
| Execution  | Do not build a private port; preserve capital for process, quality, and sales.        |
| Decision   | Conditional GO for advanced pre-feasibility; NO-GO today for full EPC commitment.     |

NEXT BOARD DECISION

Authorize a limited 16-week validation program, shortlist three sites, run pilot trials, issue RFQs to three integrators, and secure letters of intent covering at least 18,000 metric tons per year.

## EXECUTIVE APPENDIX

# Sixteen-Week Validation Plan

| Weeks | Workstream             | Output                                                        |
|-------|------------------------|---------------------------------------------------------------|
| 1–2   | Governance and product | Team, data room, 12 priority SKUs and specifications.         |
| 2–6   | Market                 | 40 interviews, customer map, net prices, LOIs.                |
| 2–8   | Sites/utilities        | Three sites per region; power, gas, water, logistics letters. |
| 3–9   | Pilot trials           | Extrusion trials, yield, aw, texture, shelf-life plan.        |
| 5–11  | Engineering            | PFD, balances, layout, equipment, staffing.                   |
| 7–12  | Regulatory/EIA         | ANMAT/SENASA path, categorization, permits.                   |
| 8–14  | RFQ/costing            | Three major quotes, civil, utilities, logistics.              |
| 12–16 | Model/decision         | Preliminary bankable model, risks, recommendation.            |

SEPTEMBER 2026

## Selected Sources and References

| Source            | Reference                                                                                                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Base document     | Ruperto G. Bravo Benavente, Extruded Balanced Feed Plant Project, July 9, 2020, 48 pages.                                                                                                 |
| Global market     | Alltech, 2026 Agri-Food Outlook, April 21, 2026.<br><a href="https://www.alltech.com/agri-food-outlook">https://www.alltech.com/agri-food-outlook</a>                                     |
| Argentina crops   | Buenos Aires Grain Exchange, Weekly Agricultural Outlook, accessed September 5, 2026.<br><a href="https://www.bolsadecereales.com/">https://www.bolsadecereales.com/</a>                  |
| Commodity prices  | World Bank, Commodity Markets / Pink Sheet, September 2026. <a href="https://www.worldbank.org/en/research/commodity-markets">https://www.worldbank.org/en/research/commodity-markets</a> |
| Macroeconomics    | Central Bank of Argentina, Market Expectations Survey, August 2026. <a href="https://www.bcra.gob.ar/">https://www.bcra.gob.ar/</a>                                                       |
| Human food        | ANMAT, Argentine Food Code.<br><a href="https://www.argentina.gob.ar/anmat/">https://www.argentina.gob.ar/anmat/</a>                                                                      |
| Animal feed       | SENASA, Animal Feed and Establishments.<br><a href="https://www.argentina.gob.ar/senasa/">https://www.argentina.gob.ar/senasa/</a>                                                        |
| Environment       | Argentina General Environmental Law 25,675 and environmental assessment framework.                                                                                                        |
| Technical support | INTI, Industrial Environment and By-product Recovery.<br><a href="https://www.argentina.gob.ar/inti/">https://www.argentina.gob.ar/inti/</a>                                              |

Regulations, incentives, tariffs, and destination-market requirements must be reconfirmed at the investment date and for the selected jurisdiction. Commercial references do not replace supplier quotations or transaction-level customs data.

## VISUAL APPENDIX

# Conceptual Layout Infographic

A separate A3 landscape English-language infographic accompanies this report. It depicts the one-way process from gate control and receiving through segregated human and animal extrusion lines, drying, coating, packaging, finished-goods storage, and dispatch.

**ENGINEERING NOTE**

Final arrangement requires topography, prevailing winds, traffic analysis, combustible-dust hazard analysis, fire engineering, hygienic routes, expansion logic, mass and energy balances, and authority requirements.