Aquafeed Production Plant Setup, Feasibility Study, ROI Analysis and Business Plan Consultant

A Detailed DPR Covering CapEx, OpEx, Pelleting and Extrusion, and the Global Opportunity in Shrimp, Carp, Tilapia, and Specialty Aquaculture Feed Production

Aquafeed Production Plant Cost

BROOKLYN, NY, UNITED STATES, May 19, 2026 /EINPresswire.com/ -- Setting up an aquafeed production plant puts you at the production base of the fastest-growing protein sector globally. Aquaculture now supplies over half the world's consumed fish, and farmed fish cannot grow without commercially formulated feed. India is the world's third-largest aquaculture producer by volume, yet operates fewer than 30 commercial-scale feed mills and imports more than 50% of its aquafeed requirement. Every unit of domestically produced aquafeed displaces an import and captures a share of a demand base growing steadily with India's expanding aquaculture capacity, shrimp export obligations, and government-backed production targets.

IMARC Group's Aquafeed Production Plant Project Report is a complete DPR and aquafeed production feasibility study for agri-business investors, feed manufacturers, and aquaculture entrepreneurs. It covers the full aquafeed production plant setup - from raw material intake and milling through mixing, steam conditioning, pellet pressing or extrusion, coating, and packaging - with complete aquafeed plant CapEx and OpEx modelling and 10-year financial projections.

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Three forces are structurally expanding aquafeed demand in India and globally:

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exports are the backbone of its fisheries economy, contributing approximately 70% of total fishery export earnings of USD 7.9 billion. Vannamei shrimp farming is concentrated in Andhra Pradesh, Tamil Nadu, Odisha, and Gujarat - all of which have shifted from traditional rice bran and oilcake mixtures to scientifically formulated commercial aquafeed. Export-oriented farms operate at FCRs (feed conversion ratios) below 1.5:1, requiring high-protein, species-specific pellets that meet international buyer quality and certification standards. A shrimp feed manufacturing plant co-located with or supplying to India's coastal shrimp belt accesses a large, quality-driven procurement base.

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An aquafeed production plant's product range is defined by target species, growth stage, and feed form - each requiring a distinct formulation and process configuration:

• □□□□□□□□ □□□□□□ □□□□: The highest-volume commercial aquafeed product in India. Starter (0.2–0.5 mm), grower, and finisher pellets across the production cycle. High protein content (32–40%), tight pellet stability (>120 minutes water stability for shrimp), and anti-nutritional factor control are critical specifications. A fish feed Production plant targeting this segment in Andhra Pradesh or Tamil Nadu accesses India's largest aquafeed market.

• □□□□ □□□□ (□□□□, □□□□□, □□□□□□): Floating and sinking pellets for India's freshwater aquaculture belt. Carp represents the largest species category by volume in India's inland aquaculture. Protein content 25–32%, pellet sizes 2–5 mm. Large demand base across West Bengal, Uttar Pradesh, Bihar, and Odisha.

• □□□□□□□ □□□ □□□□□□□□□ □□□□: High-growth species with increasing domestic and export demand. Formulated at 28–32% protein with optimised amino acid profiles. Floating extruded

pellets are preferred for tilapia. Growing segment as India expands certified aquaculture for Asian export markets.

• □□□□□□ □□□ □□□□□ □□□□ (□□□□-□□□□□ □□□□□□□): Premium-grade high-energy feed for Himalayan and northeastern hill state aquaculture. High lipid content (20–28%), cold-water formulation. Lower volume but high per-tonne value.

• □□□□□□□□ □□□ □□□□□□□ □□□□□: Microencapsulated and crumbled feeds for post-larvae and fry stages. Ultra-fine particle sizes (50–500 micron), high digestibility, minimal water pollution. Premium pricing per kilogram relative to grow-out pellets.

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Aquafeed production combines precision ingredient blending with thermal processing to produce nutritionally stable, water-resistant pellets or extruded feed. The choice between pelleting and extrusion determines whether feed floats or sinks and the degree of starch gelatinisation:

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• □□□□□□□□ □□□ □□□-□□□□□□: Macro and micro ingredients are weighed in batch or continuous systems and blended in a ribbon or paddle mixer. Liquid ingredients (fish oil, binding agents) are added at this stage. Blend uniformity is a critical quality parameter - poor mixing creates nutritional inconsistency across pellets

• □□□□□ □□□□□□□□□□□□□: Mixed dry meal passes through a conditioner where live steam is injected. This raises moisture to 14–18% and temperature to 70–85°C, partially gelatinising starch for binding and reducing microbial load. Conditioning time and steam volume directly affect pellet durability

• □□□□□□□□□ □□ □□□□□□□□□: For sinking pellets, conditioned mash is pressed through a die ring

in a ring-die pellet press. For floating feed, conditioned mash is fed into a twin-screw extruder at higher temperature and pressure (130–180°C, 20–40 bar), creating a puffed, low-density pellet that floats. Extrusion enables higher lipid inclusion and improves digestibility

• □□□□□□□: Pellets or extrudate are dried in a cross-flow or counter-flow dryer to reduce moisture to 10–12%. Uniform drying prevents mould growth during storage

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• □□□□□□□□, □□□□□□□□, □□□□ □□□□□□□□□□: Coated pellets are cooled to ambient temperature, sieved to remove fines, and packaged in 25 kg or 50 kg woven bags for retail supply or bulk bags for farm delivery

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• The proposed production facility is designed with an annual production capacity ranging between 50,000–200,000 MT, enabling economies of scale while maintaining operational flexibility

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• Gross Profit: 20–30%

• Net Profit: 8–15% after financing costs, depreciation, and taxes

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• Raw Materials (fishmeal, soybean meal, wheat, fish oil): 75–85% of total OpEx. Fishmeal is the dominant and most price-volatile input

• Utilities: 5–10% of OpEx - grinding, mixing, and pelleting are mechanically driven but not energy-intensive relative to chemical processing

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• □□□□□ □□□□ □□□□□□□□: raw material storage silos (fishmeal, soybean meal, wheat), liquid oil storage, mixing and pelleting hall, dryer and cooler, coating and packaging area, finished product warehouse

• □□□□ □□□□□□□ □□□□□□□□□: hammer mills, ribbon or paddle mixer, steam conditioner, ring-die pellet press or twin-screw extruder, dryer, vacuum coater, pellet cooler, sieving and conveying

• □□□□□□□ □□□□□□□□□□: proximate analysis equipment (moisture, protein, fat, fibre, ash), pellet durability tester, water stability test tank

• □□□□□□□□□: steam boiler, compressed air, electricity for motors and drives

• □□□-□□□□□□□□□ □□□□□: BIS feed quality registration, FSSAI clearance for food-grade species, MPEDA/EIC export certification for shrimp feed exports, initial raw material inventory

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The global aquafeed market, valued at USD 196.65 billion in 2025, is projected to reach USD 375.77 billion by 2034 at a CAGR of 7.5%. Asia Pacific accounts for approximately 73% of global aquafeed consumption, driven by China, India, Vietnam, and Indonesia.

□□□□□: The India aquafeed market reached 2.05 million tons in 2025 and is projected to reach 4.28 million tons by 2034 at a CAGR of 7.80%. Key recent investments include IFB Agro Industries' acquisition of Cargill India's shrimp feed and fish feed business (June 2025), covering production facilities in Vijayawada and Rajahmundry in Andhra Pradesh. Cargill established its first dedicated fish feed plant in India in January 2025. DSM-Firmenich opened a feed additive plant in Hyderabad in September 2025. Andhra Pradesh leads both production and consumption, followed by West Bengal, Tamil Nadu, and Gujarat.

□□□□□: The world's largest aquafeed producer and consumer. China's carp, tilapia, shrimp, and salmon farming operations are the primary demand drivers. Tongwei Co. is the world's largest single aquafeed producer.

□□□□□□□□□ □□□□: Vietnam, Indonesia, Thailand, and the Philippines have large shrimp and fish farming industries with growing commercial feed adoption. BioMar's insect protein shrimp feed partnership (September 2025) and Skretting's Japan facility expansion (October 2024) reflect active investment in regional aquafeed capacity.

□□□□□□ □□□ □□□□□ □□□□□□□: Salmon farming in Norway, Scotland, and Chile is the dominant application. High-energy, high-lipid diets for salmonids represent the premium end of global aquafeed. Cargill committed USD 50 million to aquafeed R&D in January 2025, focusing on sustainable protein sources and probiotic formulations.

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Location decisions for an aquafeed plant setup directly affect raw material cost, customer proximity, and regulatory compliance:

• [illegible]: Fishmeal at 75–85% of OpEx must be sourced reliably and cost-effectively. Sites near Tamil Nadu, Kerala, or Gujarat coastal fish landing centres access domestic fishmeal at competitive prices. Co-location with or proximity to shrimp farming belts in Andhra Pradesh, Odisha, and Gujarat minimises outbound logistics cost and allows direct pond-side delivery

• [illegible]: Fishmeal is moisture-sensitive and prone to oxidation. Factory design must include covered, ventilated fishmeal storage to prevent quality deterioration. For premium shrimp feeds with high lipid content, cold oil storage is required

• [illegible]: Shrimp feed exported with farmed shrimp must comply with MPEDA/EIC traceability requirements. Plants in or adjacent to Coastal Aquaculture Authority (CAA) notified zones and SEZs (Special Economic Zones) in Andhra Pradesh or Tamil Nadu facilitate compliance

• [illegible]: India-PMMSY subsidies for aquafeed mills and new pond development, NFDB grants for aquafeed R&D and technology adoption, APEDA support for export-grade feed certification. Andhra Pradesh and Odisha-state aquaculture investment subsidies and fisheries department technical support. Custom duty concessions on aquafeed inputs including fish oil and specific additives

• [illegible]: Feed mill operations require water for steam conditioning, cleaning, and firefighting. Sites with industrial water supply or ground water access at regulated abstraction are a standard site requirement

[illegible]

IMARC Group's Aquafeed Plant Project Report is a complete aquafeed production business plan and technical reference:

• [illegible]: from raw material intake through milling, mixing, conditioning, pelleting/extrusion, drying, coating, and dispatch

• [illegible]: mills, mixer, conditioner, pellet press or extruder, dryer, coater, cooler, packaging line

• 10-[illegible]: aquafeed plant OpEx covering fishmeal, soybean meal, fish oil, additives, energy, labour, and maintenance

• [illegible]: aquafeed plant ROI, IRR, NPV, DSCR, break-even, and sensitivity tables across fishmeal price and sales volume scenarios

• [illegible]: shrimp versus carp versus tilapia feed-protein specification, ingredient sourcing, and margin comparison for an aquaculture feed production plant

• [illegible]: pellet press versus twin-screw extruder comparison; Indian and European equipment supplier options

• [illegible]: across 50,000, 100,000, and 200,000 MT/year configurations

• [illegible]: BIS IS 16028, FSSAI food-grade clearance, CAA coastal aquaculture compliance, MPEDA export certification

The report is built for agri-business and aquaculture investors evaluating an aquafeed plant investment, existing feed manufacturers expanding into aquaculture, coastal state entrepreneurs targeting the shrimp feed market, and banks requiring a bankable aquafeed production feasibility study for project financing.

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• [illegible]: https://www.imarcgroup.com/aluminum-manufacturing-plant-project-report

• [illegible]: https://www.imarcgroup.com/agrochemicals-manufacturing-plant-project-report

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IMARC Group is a global market research and management consulting firm. Its plant setup and DPR practice serves investors, developers, government agencies, and banks across 50+ countries, delivering reports used for loan documentation, investment approvals, and engineering planning.

Elena Anderson
IMARC Services Private Limited
+1 201-971-6302
email us here