



SANAATCHI
INDUSTRIAL VISION
GROUP

SHAMPOO PRODUCTION LINE

Complete TurnKey Business Proposal



Executive Summary

The proposed shampoo production line offers a complete **turnkey solution** designed to establish a premium shampoo manufacturing facility. By combining proven manufacturing technology with comprehensive support services, this project enables rapid market entry and profitable operation. Key features of the proposal include:

- **Production capacity:** 1,000–5,000 bottles per hour.
- **Investment range:** US \$150 000 – \$500 000, covering equipment, installation, training and working capital.
- **Payback period:** 18–36 months.
- **Market size:** Global shampoo market of more than US \$30 billion.

This document details the manufacturing process, product portfolio, investment requirements, quality standards and next steps for launching the production line. Each step is elaborated to ensure clarity and professional presentation.

About Sanaatchi Industrial Vision

Sanaatchi Industrial Vision is Afghanistan's premier partner for turnkey manufacturing and industrial solutions. The company conveys the motto "Your vision, our expertise"—clients provide the idea and capital, and Sanaatchi manages the entire journey from initial design to the first finished product. The promise is simple: you define the vision; we pave the path from design to production.

Sanaatchi manages all stages of factory setup, enabling clients to concentrate on their vision and investment while the company handles implementation and operation. Our services are organized into four integrated phases:

1. **Engineering & Design:** technical and economic feasibility studies, conceptual and basic design of the production line.
2. **Global Sourcing & Logistics:** identification and vetting of global suppliers, full management of procurement and transportation.
3. **Implementation & Construction:** project management and supervision of construction; procurement and delivery of all machinery.
4. **Commissioning & Support:** pre-commissioning and final testing, comprehensive training of technical staff and operators.

Sanaatchi emphasises customer trust, transparent and competitive pricing, and strict adherence to project timelines. This comprehensive approach ensures clients receive a fully operational production line that meets technical specifications, regulatory requirements and market needs.

Market Opportunity in Afghanistan

Afghanistan’s personal-care market relies heavily on imported shampoo, creating a substantial opportunity for **local manufacturing**. The key market drivers include:

- **Population growth and urbanisation:** increasing demand for personal-care products.
- **Rising hygiene awareness:** consumers are adopting regular hair-care routines.
- **Import substitution:** more than 60 % of the current market is supplied through imports.
- **Private-label growth:** retailers seek local contract manufacturing partners.
- **Export potential:** neighbouring markets offer additional demand.
- **Government support:** policies encourage domestic manufacturing.

By establishing a local facility, investors can supply the domestic market, create private-label products for retailers and explore regional export opportunities while reducing exposure to import tariffs and currency fluctuations.

Product Portfolio – Phase 1 Launch

The initial product portfolio focuses on three categories of shampoo products. The table below summarises the key features, target market and pricing for each category.

Product line	Key features	Target market	Typical price range
Standard Shampoo Line	Daily cleansing, moisturising formulas; anti-dandruff colour-protection variants	Mass market consumers	US \$0.8 – \$3 per bottle
Premium Specialty Line	Sulphate-free organic formulations, keratin treatments, biotin strengthening	Premium market segment	US \$3 – \$8 per bottle
Private-Label Services	Custom formulations, brand development and packaging design for business-to-business clients	Retailers and contract manufacturing clients	Pricing determined by formulation and volume

Each product category can be tailored to customer specifications, including fragrance, colour, packaging and marketing positioning.

Manufacturing Process Flow:

Production is organised into **ten sequential steps**, from raw-materials handling to final packaging. The flow ensures consistent quality, traceability and regulatory compliance. A summary of each step, associated equipment and key parameters is provided below.

Step	Process name	Key equipment	Main parameters
1	Raw materials storage & weighing	Climate-controlled warehouse, precision scales	Temperature 15–25 °C, weighing accuracy ± 0.1 %, storage ≈ 3 month buffer
2	Water treatment & purification	Multi-stage filtration, reverse-osmosis (RO) unit, UV sterilisation	TDS rejection >95 %, recovery 75–85 %, conductivity <5 $\mu\text{S}/\text{cm}$
3	Pre-mixing of minor ingredients	Small mixing tank (100–300 L) with high-speed agitator and heating jacket	Temperature 40–50 °C, agitation 100–200 RPM, mixing time 15–30 min
4	Main mixing & surfactant dissolution	Large mixing tank (500–2 000 L) with variable-speed agitator, heating/cooling jacket, vacuum system	Temperature 70–75 °C, agitation 20–150 RPM, mixing time 30–45 min
5	High-shear homogenisation	High-shear homogeniser with recirculation pump	Power 7.5–22 kW, speed $\sim 3\,000$ RPM, processing time 15–20 min
6	pH adjustment & stabilisation	pH meter and automatic dosing system	Target pH 5.0–7.0, accuracy ± 0.2 , adjustment time 10–15 min
7	Addition of heat-sensitive ingredients	Dosing pumps with gentle agitation	Temperature 30–40 °C, mixing speed 20–50 RPM, addition time 15–

Step	Process name	Key equipment	Main parameters
			30 min, dosing accuracy $\pm 1\%$
8	Comprehensive quality control	QC laboratory with pH meter, viscometer, microbiological testing equipment	pH accuracy ± 0.01 , viscosity range 8 000 cP, microbial count < 10 CFU/g
9	Precision filling & capping	Automatic piston filler, rotary capping machine, control system	Speed 1 000–5 000 bph, fill accuracy $\pm 0.5\%$, torque accuracy $\pm 10\%$
10	Final labelling & packaging	Automatic labelling machine, vision inspection, cartoning equipment	Speed 1 000–6 000 bph, label accuracy ± 1 mm

Detailed Process Descriptions:

Step 1 – Raw Materials Storage & Weighing

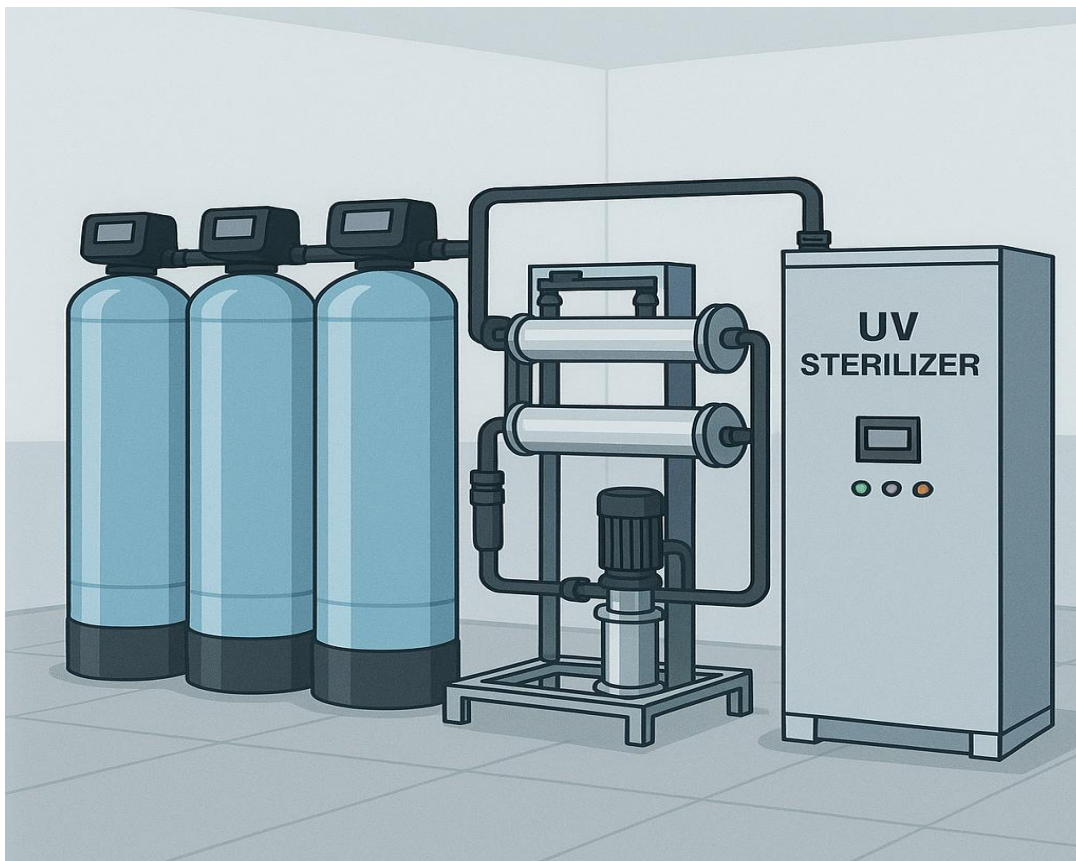
Incoming raw materials are received in a **climate-controlled warehouse** equipped with stainless-steel storage tanks and HDPE drums. Each ingredient is weighed on calibrated digital scales with $\pm 0.1\%$ accuracy, assigned a batch number and recorded for traceability. A **first-in, first-out (FIFO)** system ensures proper rotation, while quality control verifies certificates of analysis and performs incoming material tests.



Climate-controlled storage tanks and drums

Step 2 – Water Treatment & Purification

Municipal water is processed through **sediment filtration**, **activated-carbon adsorption**, **reverse osmosis (RO)** and **UV sterilisation** to achieve pharmaceutical-grade purity. The RO system rejects more than 95 % of dissolved solids, while UV sterilisation delivers a dose of 30–40 mJ/cm² to eliminate microorganisms. Treated water is stored in stainless-steel tanks with continuous circulation to maintain conductivity below 5 µS/cm.



Water treatment system with RO and UV steriliser

Step 3 – Pre-Mixing of Minor Ingredients

Minor ingredients such as preservatives, colourants and specialty additives are **pre-mixed** in small batches to ensure uniform distribution before introduction into the main batch. A heated mixing tank maintains 40–50 °C, while a high-speed agitator (100–200 RPM) dissolves solids and prevents clumping. Controlled heating prevents degradation of heat-sensitive components.

Step 4 – Main Mixing & Surfactant Dissolution

Primary surfactants are dissolved in treated water within a **large mixing tank**. Temperature is held at 70–75 °C and agitation is carefully controlled (20–150 RPM) to achieve complete dissolution without foam formation. A heating/cooling jacket ensures uniform temperature, and a vacuum system allows deaeration if necessary.



Stainless steel mixing tank with high shear homogeniser

Step 5 – High-Shear Homogenisation

A **high-shear homogeniser** applies mechanical and hydraulic forces to break down particles and create a stable emulsion. Operating at 1 000–3 000 RPM with power between 7.5 kW and 22 kW, the system reduces particle size to 2–5 μm . This step ensures consistent texture, viscosity and appearance.

Step 6 – pH Adjustment & Stabilisation

After homogenisation, the batch's pH is adjusted to match the natural pH of hair (5.0–7.0). **Automated dosing systems** add pH modifiers incrementally with continuous monitoring. Temperature is maintained at 40–50 °C to ensure proper reaction kinetics, and mixing continues until the desired pH (± 0.2) is achieved.

Step 7 – Addition of Heat-Sensitive Ingredients

Heat-sensitive components—fragrances, botanical extracts, vitamins and specialty additives—are added at lower temperatures (30–40 °C). Dosing pumps deliver these ingredients with ± 1 % accuracy while gentle agitation (20–50 RPM) ensures uniform distribution without damaging delicate compounds.

Step 8 – Comprehensive Quality Control

Every batch undergoes rigorous quality testing in a fully equipped laboratory. The QC team measures **pH**, **viscosity**, **microbial count** and **stability**. Products are held in quarantine

until all parameters meet specifications. Test results are logged in a Laboratory Information Management System (LIMS) for traceability.



Quality control laboratory with pH meter, viscometer and microscope

Step 9 – Precision Filling & Capping

Finished shampoo is filled into bottles using precision **piston fillers** controlled by servo motors. Filling accuracy is maintained at $\pm 0.5\%$ and speeds range from 1 000 to 5 000 bottles per hour. A **rotary capping machine** applies caps with consistent torque ($\pm 10\%$), and a vision inspection system rejects improperly filled or capped bottles.



Automatic piston filling and capping machine for shampoo bottles

Step 10 – Final Labelling & Packaging

Bottles are labelled using **automatic multi-format labelling machines** capable of front, back and wrap-around application. Label placement is verified by vision inspection systems with ± 1 mm accuracy. Products are then packaged according to customer requirements—individual wrapping, multipacks or cartons—and undergo final inspection before shipment.



Automatic labelling machine applying labels to bottles

Raw Materials Requirements

Shampoo formulations typically consist of the following **primary raw-material categories**:

- **Surfactants (15–20 %)**: sodium lauryl sulfate (SLS), sodium laureth sulfate (SLES) and cocamidopropyl betaine—primary cleansing agents.
- **Water (60–70 %)**: pharmaceutical-grade purified water—serves as the base solvent.
- **Conditioning agents (2–4 %)**: polyquaternium-7, dimethicone, panthenol—enhance softness and manageability.
- **Thickeners (1–3 %)**: sodium chloride, xanthan gum, carbomer—control viscosity.
- **Preservatives (0.5–1.5 %)**: phenoxyethanol, sodium benzoate, potassium sorbate—ensure microbiological safety.
- **pH adjusters (0.1–0.5 %)**: citric acid, sodium hydroxide, sodium citrate—maintain optimal pH.
- **Fragrances (0.5–2.0 %)**: essential oils and synthetic fragrances—provide aroma.
- **Colourants (0.01–0.5 %)**: food-grade dyes, natural colourants—give the product its appearance.
- **Specialty additives**: silicones, botanical extracts, vitamins and proteins—offer premium features.

A cost analysis indicates that standard formulations require **US \$0.90–1.69 per litre**, or approximately **US \$0.45–0.85 per 500 ml bottle**, while premium formulations cost **US \$1.50–2.50 per litre**, equivalent to **US \$0.75–1.25 per 500 ml bottle**. All raw materials are stored in a climate-controlled warehouse with a FIFO inventory system and undergo incoming quality tests to ensure compliance.

Investment Summary & Returns

The investment requirements for the shampoo production line are summarised in the table below.

Component	Low range (US)	Low range (US)	Note
Equipment cost	120 000	400 000	Includes mixing tanks, homogeniser, fillers, cappers, labelling and packaging machinery
Installation & training	15 000	30 000	Covers on-site installation and operator training
Working capital	15 000	50 000	Funds raw-material procurement and initial operations
Total investment	150 000	480 000	Aggregate of the above costs

Projected returns include an **annual ROI of 25–40 %** and a **payback period of 18–36 months**. The implementation timeline is as follows:

1. **Months 1–2 – Equipment procurement:** place orders for all process equipment and start facility preparation.
2. **Month 3 – Installation & commissioning:** receive and install equipment; connect utilities and perform initial setup.
3. **Month 4 – Testing & validation:** run trial batches, adjust parameters and validate processes.
4. **Month 5 – Training & optimisation:** train operators and refine production procedures.
5. **Month 6 – Production launch:** commence commercial production, marketing and distribution.

Break-even is expected between **months 12 and 18**, depending on capacity utilisation and market conditions.

Quality Standards & Compliance

The production line is designed to meet both **Afghan and international quality standards**. Compliance requirements include:

- **FDA (21 CFR Part 700)** – ensures that all ingredients meet cosmetic safety regulations.
- **ISO 22716 (Cosmetic GMP)** – defines good manufacturing practices for personal-care products.
- **CE marking (safety)** – addresses equipment safety and conformity for export markets.
- **Quality assurance systems:** raw-material inspection, in-process monitoring, labelling accuracy, process validation, stability programmes and comprehensive documentation.

Adhering to these standards ensures consumer safety, product consistency and regulatory compliance across target markets.

Conclusion and Next Steps

Establishing a shampoo production line in Afghanistan presents a lucrative opportunity to capitalise on local demand, reduce import dependency and create high-quality products tailored to regional preferences. The turnkey approach offered by Sanaatchi Industrial Vision minimises risk by providing comprehensive services—from design and equipment procurement to installation, training and after-sales support. With proper execution, investors can expect attractive returns and long-term growth.

Contact Information

To discuss your specific requirements or request a customised proposal, please contact:

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Next steps:

1. Schedule an **initial consultation** within 24 hours.
2. Receive a **custom proposal** tailored to your production goals.
3. Conduct a **site assessment** and detailed planning.
4. Proceed with **project implementation** and ongoing support.

With these steps completed, your shampoo production line can be operational within six months, delivering quality products and capturing market share in a growing industry.