PROJECT PROFILE

ROASTED APRICOT KERNEL SNACK IN LADAKH..

ADMINISTRATION OF UNION TERRITORY OF LADAKH
Enterprising Ladakh
ENTREPRENEURSHIP DEVELOPMENT INSTITUTE OF INDIA, AHMEDABAD

1. INTRODUCTION

Ladakh is uniquely positioned for value-added processing of apricot kernels. The region produces large volumes of apricots—over **15,000 metric tons annually**. Ministry of Food Processing Industries+3iahs.org.in+3Ministry of Tribal Affairs+3
Yet a significant portion of kernels (30-40 %) go unused and are discarded as waste. By recovering and processing these kernels into a premium roasted-snack product, you can unlock multiple benefits:

- Waste reduction & improved sustainability
- Additional income for apricot farmers
- Strengthening Ladakh's value chain under initiatives like One District One Product (ODOP) ladakh.gov.in+1
- Leveraging the GI-tagged variety Raktsey Karpo Apricot for premium branding. The Statesman+1

The kernels themselves are nutritionally rich—offering healthy fats, antioxidants, and compounds like vitamin B17 which health-conscious consumers increasingly seek.

By producing a roasted snack variant, you tap into global consumer trends (better snacking, healthy fats, plant-based snacks) and align with the tourism economy of Ladakh (tourists seeking unique local products) as well as digital/e-commerce opportunities.

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2. PRODUCT & ITS APPLICATION

Core Offerings:

1. **Roasted Apricot Kernels**:
    - *Flavors*: Himalayan pink salt, chili-lime, honey-glazed, and turmeric-black pepper.
    - *Packaging*: Compostable pouches (100g, 250g) and gift boxes for tourists.
2. **Value-Added Products**:
    - *Kernel Flour*: Gluten-free baking ingredient for cookies and energy bars.
    - *Trail Mixes*: Blended with dried seabuckthorn, almonds, and raisins.
    - *Apricot Kernel Oil*: Cold-pressed for culinary and cosmetic use.

Applications:

- **Health & Wellness**: Protein-rich snack for fitness enthusiasts, keto/paleo diets.
- **Tourism**: Sold at Leh Airport, homestays, and eco-resorts as "Ladakhi Superfood."
- **Export**: Targeting EU/US organic markets via Fair Trade certifications.

USPs:

- **GI Tag Potential**: Unique terroir-driven flavor from Ladakh's 2,800m+ altitude orchards.
- **Zero-Waste Model**: Utilizing 100% of apricot by-products (kernels, pits for biomass).
- **Carbon-Neutral**: Solar-powered processing units and electric roasting.

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3. DESIRED QUALIFICATION FOR PROMOTER

- **Education**:
  - Degree in Food Technology, Nutrition, or Agribusiness.
  - Certifications: HACCP, FSSAI compliance, Organic Processing (NPOP).
- **Experience**:
  - 3+ years in FMCG, organic food startups, or nutraceuticals.
  - Exposure to supply chain management in remote regions.
- **Skills**:
  - Digital marketing (SEO, Instagram Reels) for D2C sales.
  - Fluency in Ladakhi/Hindi/English for farmer negotiations.
- **Local Ties**: Partnerships with **Ladakh Apricot Growers' Cooperative** and tourism boards.

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4. INDUSTRY LOOKOUT AND TRENDS

- **Global Trends**:
  - **$12.3 billion healthy snacks market** (6.8% CAGR by 2027; Allied Market Research).
  - Surge in demand for plant-based, non-GMO, and gluten-free products.
- **Regional Drivers**:
  - **Ladakh's ODOP Scheme**: 50% subsidy for apricot value-addition infrastructure.
  - **Tourism Surge**: 700,000+ visitors in 2023 seeking authentic, eco-friendly souvenirs.
- **Challenges**:
  - Seasonal harvest (July–September) requiring cold storage for year-round processing.
  - High logistics costs from Ladakh to urban markets.

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5. MARKET POTENTIAL & MARKETING ISSUES

Market Segmentation:

Segment	Target Audience	Price (INR/100g)	Annual Volume
Premium Health	Urban millennials, gym-goers	₹150–200	5,000 kg
Tourism	Domestic/international tourists	₹100–150	8,000 kg
Export	EU/US organic stores	₹300–500	2,000 kg

Marketing Strategies:

- **Digital Campaigns**:
  - Instagram Reels showcasing kernel harvesting and roasting processes.

    - Collaborations with influencers like *Fit Tuber* and *Yoga with Adriene*.
- **B2B Partnerships**:
    - Supplying premium hotels (The Grand Dragon) and airlines (Vistara).
    - Listing on platforms like **Amazon Organic** and **BigBasket**.
- **Eco-Branding**:
    - QR codes on packaging linking to farmer stories and carbon footprint data.

Key Challenges & Solutions:

Challenge	Solution
Low Kernel Awareness	Free sampling at trekking routes and festivals
Seasonal Supply	Solar-powered cold storage units
Export Compliance	APEDA certification and Fair Trade partnerships

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6. RAW MATERIAL REQUIREMENTS

Material	Source	Annual Need	Sustainability
Apricot Kernels	500+ smallholder farmers	15,000 kg	Fair-price contracts, waste reduction
Natural Flavors	Regional spice markets	1,000 kg	Organic-certified suppliers
Compostable Packaging	EcoEnclose	50,000 units	Home-compostable, FSC-certified

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7. MANUFACTURING PROCESS

1. **Kernel Extraction**:
    - Mechanized shellers to crack apricot pits (95% efficiency).
2. **Cleaning & Sorting**:
    - Vibratory sieves and air classifiers to remove debris.
3. **Blanching**:
    - Hot water treatment to loosen skins (optional for smooth texture).
4. **Roasting**:
    - Electric drum roasters (160°C for 15 mins) for even browning.
5. **Flavoring**:
    - Tumble coating with Himalayan salt, chili, or organic honey.
6. **Packaging**:
    - Nitrogen-flushed pouches with 12-month shelf life.

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8. MANPOWER REQUIREMENT

Role	No.	Monthly Salary (INR)	Training
Production Head	1	50,000	Food safety standards (ISO 22000)
Roasting Technicians	4	25,000	Machine operation, quality control
Packaging Team	6	18,000	Eco-packaging techniques
Sales & Marketing	2	40,000	Export compliance, digital marketing
Total	**13**	**3,02,000**	

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9. IMPLEMENTATION SCHEDULE

Phase	Timeline	Key Activities	Milestones
Phase 1: Setup	Months 1–3	Facility lease, FSSAI registration, machinery procurement	MoU with 200 farmers
Phase 2: Pilot	Months 4–5	Test batches, feedback from tourists	1,000 kg sold in Leh Market
Phase 3: Scale-Up	Months 6–12	Launch e-commerce, secure export deals	₹50 lakh revenue, 10+ B2B clients

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10. COST OF PROJECT

Component	Cost (INR)	Breakdown
Machinery & Equipment	25,00,000	Shellers, roasters, packaging machines
Cold Storage Setup	10,00,000	Solar-powered units for kernel storage
Marketing & Branding	12,00,000	Influencer campaigns, trade fairs
Working Capital	15,00,000	Salaries, raw materials, logistics
Total	**62,00,000**	

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11. MEANS OF FINANCE

Source	Amount (INR)	Terms
Promoter Equity	25,00,000	40% of total
NABARD Agri-Loan	30,00,000	7% interest, 5-year moratorium
PM FME Subsidy	7,00,000	35% grant on machinery

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12. MACHINERY/EQUIPMENT

Equipment	Quantity	Cost (INR)	Purpose
Mechanical Sheller	3	15,00,000	Efficient kernel extraction
Electric Roaster	2	8,00,000	Uniform roasting, energy-efficient
Vacuum Packager	2	12,00,000	Extended shelf-life packaging

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13. PROFITABILITY CALCULATIONS

Metric	Year 1	Year 2	Year 3
Revenue	₹1,50,00,000	₹2,50,00,000	₹4,00,00,000
COGS	₹90,00,000	₹1,40,00,000	₹2,00,00,000
EBITDA	₹45,00,000	₹85,00,000	₹1,60,00,000
Net Profit (Post-Tax)	₹27,00,000	₹51,00,000	₹96,00,000
ROI	**43%**	**82%**	**154%**

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14. BREAKEVEN ANALYSIS

- **Fixed Costs**: ₹40,00,000/year (rent, salaries, EMI).
- **Variable Cost/kg**: ₹250 (raw material, packaging).
- **Selling Price/kg**: ₹600 (average).
- **BEP (kg/year)**: 40,00,000600−250=∗∗11,428kg/year∗∗600−25040,00,000 =∗∗11,428*kg/year*∗∗.

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15. STATUTORY/GOVERNMENT APPROVALS

- **FSSAI License**: Mandatory for food processing.
- **APEDA Registration**: For export certification.
- **GSTIN**: Tax compliance.
- **Organic Certification (NPOP/USDA)**: For premium pricing.

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16. BACKWARD & FORWARD INTEGRATIONS

- **Backward**:
    - Training farmers in mechanized shelling via **Ladakh Skill Development Mission**.
    - **Solar Dryers**: Distributed to farmers for pit drying.
- **Forward**:
    - **D2C E-Commerce**: *HimalayanKernel.com* for global sales.
    - **CSR Partnerships**: Tata Trusts for school nutrition programs.

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17. TRAINING & DEVELOPMENT

- **CIPHET (Ludhiana)**: Workshops on food safety and preservation.
- **NIFTEM**: Training in export packaging and branding.
- **Local NGOs**: Artisan training in eco-packaging techniques.

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18. Machinery Suppliers

To process apricot kernels into roasted snack form, you'll need machinery for the following steps: cleaning, shell/crack removal (if needed), sorting/grading, roasting,

flavouring/seasoning (optional), packaging. Below are some equipment options + product suggestions you can explore:

- Dried Fruit Roasting Machine (200 kg/hr): Good mid-capacity option for pilot or start-up scale.
- Hot Air Roaster Machine 50 Ltrs: Entry-level machine, helps test product/market before scaling.
- Dried Fruit Roasting Machine (1000 kg/hr): High-capacity machine for full scale operations when volume justifies.
- Micro Mill 50 Ltrs Roaster Machine: Another smaller scale alternative.
- Robust2 1000 Kg Roaster: Industrial grade roaster for large throughput.
- Makhana Roaster Machine: While aimed at makhana, the principle can apply to kernel roasting with adaptations (heat, agitation).
- Hot Air Roaster + Micro Mill Combo: A combo setup to allow flexibility—small roaster + mill for pilot.
- Dual-Capacity Dried Fruit Roasting Machines: Strategy for scale escalation — start with 200 kg/hr, move to 1000 kg/hr.

Shell / kernel preparation & cleaning

You will also need equipment for shelling / cracking the apricot kernels (hard shell), sorting machines, destoners, graders. While specific product links weren't found in the search results, typical suppliers for nut-kernel processing (almonds, pistachios) provide such equipment; you can adapt for apricot kernels.

Suppliers / Vendors

While I did **not** locate exclusive manufacturers for apricot kernel equipment in the search results, you can approach processing equipment manufacturers across North India. For example:

- Oil-mill / seed processing machinery suppliers (seen in ancillary references) Reddit
- Contact local state horticulture/processing units in Ladakh or nearby states for machinery subsidies via government programmes.
- The Government of Ladakh is supporting processing infrastructure (driers, equipment) under ODOP. ladakh.gov.in

Infrastructure & utilities

- Adequate space and power supply for roasting machines
- Ventilation and dust/ash handling (kernels produce shells, dust)
- Temperature/humidity control (kernels must be dry before roasting)
- Packaging room with hygienic standards (FSSAI compliance)
- Possibly cold/hot storage before/after roasting; though roasting improves shelf-life, kernels still need proper storage.

Conclusion

This venture transforms Ladakh's apricot waste into a **₹4 crore revenue** opportunity by Year 3, delivering **154% ROI**. By merging tradition with innovation, it empowers farmers, delights health-conscious consumers, and positions Ladakh as a leader in sustainable agro-processing. Strategic tourism tie-ups and carbon-neutral practices ensure scalability, aligning with global trends in ethical consumption.