

Raagi-Based Chips

Manufacturing Unit



Raagi-Based Chips Manufacturing Unit

1. Introduction

The proposed project involves setting up a raagi-based chips manufacturing unit in Uttarakhand to produce healthy and nutritious snack alternatives using locally grown finger millet (raagi). Raagi is a traditional cereal crop of the hills and is known for its high calcium, iron, and dietary fiber content. By processing it into chips, the venture will add value to local agricultural produce, create jobs, and promote healthier snacking habits among consumers.

This unit will focus on producing baked and fried raagi chips in various flavours like masala, salted, herbed, and cheesy variants to appeal to diverse consumer segments. The use of locally sourced raagi will reduce the carbon footprint of production while offering economic benefits to local farmers. Packaging will be eco-friendly and designed to attract both health-conscious and general snack consumers.

The initiative aligns with the government's focus on millet promotion under the International Year of Millets campaign and supports Uttarakhand's mission to enhance agro-based industries. It will encourage local youth and women to participate in food processing, thereby strengthening the rural economy.

2. Industry Overview

India's snack food industry is valued at over INR 45,000 crore and is growing at about 12% annually, driven by urbanisation, rising disposable incomes, and changing lifestyles. Within this, the healthy snacks segment has emerged as a major trend, witnessing increasing demand for millet-based products like chips, cookies, and bars. The Government of India has been actively promoting millets due to their nutritional and climate-resilient qualities.

Millet-based products are now found in supermarkets, organic stores, and e-commerce platforms, reflecting strong consumer interest. Food brands are investing heavily in R&D to create innovative millet snacks with appealing taste and texture. The market is shifting from conventional fried potato chips to healthier, baked alternatives.

In Uttarakhand, snack consumption is high among students, tourists, and working professionals, but most packaged snacks are brought from outside. Establishing a local raagi chips unit can tap this growing demand while reducing transportation costs and creating a unique regional product identity.



3. Products and Application

The main products will be baked and fried raagi chips made from raagi flour blended with natural spices and seasoning. Flavours will include plain salted, tangy masala, herbed, cheesy, and chilli variants. The chips will be packaged in moisture-proof pouches with attractive branding highlighting their health benefits and local sourcing.

Applications include retail sales through supermarkets, kirana stores, and tourist shops, as well as supply to schools, hostels, hotels, and corporate canteens. Online marketplaces like Amazon and Flipkart offer further reach to health-conscious urban consumers nationwide. Gift hampers and festival packs will target premium segments.

The product line can be expanded to include raagi nachos, multigrain chips, and raagi crackers. Offering low-oil, baked variants will cater to diabetic and fitness-focused consumers seeking guilt-free snacks.

4. Desired Qualification

The venture is suitable for entrepreneurs with an interest in food processing and agribusiness. While a background in food technology is an advantage, it is not mandatory. Training in snack manufacturing, quality control, and packaging can be obtained from local food processing training centres and the MSME Development Institute.

Local youth and women can be trained as operators, packagers, and quality controllers. The technical processes like dough preparation, cutting, frying, baking, and seasoning are easy to learn and can be mastered through short training programs. Familiarity with hygiene standards and food safety norms is essential.

The entrepreneur should also have basic skills in business management, digital marketing, and inventory management to run the enterprise effectively. Partnerships with local farmer groups for raagi procurement will be crucial for ensuring consistent raw material supply.

5. Business Outlook and Trend

The outlook for raagi chips is highly positive, supported by rising demand for nutritious and regional snacks. Consumers are increasingly aware of the health benefits of millets, which are gluten-free, rich in minerals, and beneficial for weight management and diabetes control. Schools and health-focused institutions are encouraging millet-based foods.

The trend of healthy snacking is expected to accelerate, with more people shifting from fried potato chips to baked millet-based options. Raagi chips can be positioned as a healthy, crunchy, and local alternative. Government millet promotion campaigns will further boost consumer awareness.

Given that Uttarakhand is a leading producer of millets, especially in hilly districts, a raagi chips unit can benefit from abundant raw materials, low transport costs, and the state's millet



branding initiatives. The business can scale up quickly with proper marketing and institutional linkages.

6. Market Potential and Market Issues

The potential market for raagi chips includes school and college students, working professionals, tourists, and health-conscious families. Uttarakhand has a large tourism industry with high snack consumption. Retail stores, hotels, and tourist outlets offer ready access to consumers. Institutional buyers like schools, army canteens, and hospitals are promising bulk customers.

Challenges include competition from established snack brands, consumer taste preferences, and the need to maintain consistent product quality. Millet-based chips are new to many consumers, so awareness campaigns and tasting sessions will be needed to build acceptance. Shelf life and packaging will be critical to avoid moisture-related spoilage.

Managing raw material availability during off-season and ensuring timely procurement from farmers are also challenges. Strong backward linkages and raw material storage facilities will be needed to ensure continuous production.

7. Raw Material and Infrastructure

Key raw materials will include raagi flour, edible oil, natural spices, seasoning blends, and packaging film. Raagi can be sourced from local farmers in districts like Almora, Pauri, Chamoli, and Bageshwar through farmer producer organisations and cooperatives. Spices can be procured from local mandis, while packaging materials can be sourced from Haridwar and Rudrapur industrial areas.

The unit will require about 2500 sq. ft. space with sections for raw material storage, dough preparation, rolling and cutting, frying/baking, seasoning, packaging, quality testing, and finished goods storage. The building will be well-ventilated, hygienic, and equipped with drainage, water, power backup, and safety systems.

Solar dryers and energy-efficient fryers will be used to reduce operational costs and environmental impact. Proper pest control and sanitation systems will be installed as per FSSAI norms.

8. Operational Flow and Flow Chart

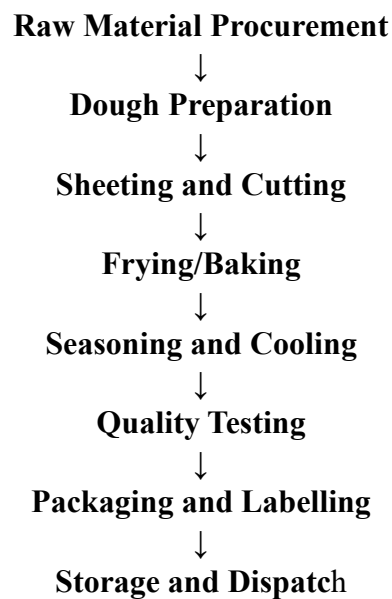
The production process begins with the procurement and inspection of raw materials. Raagi flour is mixed with water, oil, and spices to prepare the dough. The dough is sheeted, cut into chip shapes, and then fried or baked. Seasoning is applied, and the chips are cooled, packed, and labelled.



All batches undergo quality checks for moisture, texture, taste, and microbial safety. Finished products are stored in a dry room until dispatch. Production will be tracked through a digital inventory system to ensure efficiency and traceability.

By-products like oil residue and flour scraps will be collected and sold as cattle feed, ensuring zero waste.

Flow Chart:



9. Target Beneficiaries

Primary beneficiaries will be local farmers supplying raagi who will get assured markets and better prices. Local youth and women will gain employment in production, packaging, and quality control. Self-help groups can be engaged for seasoning and packaging tasks.

Secondary beneficiaries will include local suppliers of spices, packaging materials, and logistics operators. The venture will strengthen the regional agro-processing value chain and encourage millet cultivation in hilly regions.

Consumers will benefit from healthier snack options, contributing to improved public health outcomes and promoting local pride in traditional crops.



10. Suitable Locations

Suitable locations include Almora, Bageshwar, Chamoli, Pauri, and Tehri for proximity to raagi production zones. For better logistics and access to markets, semi-urban centres like Haldwani, Rudrapur, Dehradun, and Haridwar are also ideal.

Industrial estates in Selaqui, SIDCUL Haridwar, and Pantnagar offer ready-built sheds and utilities. Proximity to highways will ensure smooth supply chain and distribution.

Setting up satellite units in millet-growing villages can help decentralise production, lower costs, and generate rural employment.

11. Manpower Requirement

Initially, about 25 workers will be required including dough makers, chip cutters, fryers/bakers, seasoning workers, packagers, quality inspectors, and store handlers. Supervisory staff will include a production manager, procurement officer, and marketing executive.

Local youth and women will be trained under PMFME and Skill India schemes on hygienic processing, machinery operation, and food safety norms. Women SHGs can be involved in packaging and labelling operations to enhance livelihoods.

As production scales, additional staff can be recruited for marketing, logistics, and R&D to develop new flavours and packaging designs.

12. Implementation Schedule

Activity	Timeline (Months)
DPR preparation and business registration	0–2
Site selection and infrastructure setup	2–4
Machinery procurement and installation	3–5
Recruitment and staff training	3–6
Trial production and FSSAI certification	5–6
Branding and marketing launch	5–7
Commercial production start	6–8
Market expansion and distribution tie-ups	9–12



13. Estimated Project Cost

Cost Head	Amount (INR)
Land and shed setup	10,00,000
Machinery and tools	15,00,000
Raw material (initial stock)	4,00,000
Training and skill development	2,00,000
Branding and marketing	3,00,000
Salaries and wages (1 year)	7,00,000
Utilities and overheads	2,00,000
Contingency and miscellaneous	2,00,000
Total Estimated Cost	45,00,000

14. Means of Finance

The project can be financed through 25% promoter contribution, 60% term loan from banks or NABARD, and 15% subsidy under PMFME or state MSME policies. Working capital can be arranged through cash credit and invoice discounting.

Additional funds can be raised from impact investors and CSR programs supporting millet value chains. Equity crowdfunding can also be explored for seed capital.

Proper documentation, GST registration, and certifications will help build credibility and improve access to finance.



15. Revenue Streams

Main revenue will come from sales of packaged raagi chips to retailers, wholesalers, institutions, and e-commerce platforms. Contracts with schools, hotels, and canteens will provide bulk orders and stable cash flows.

Secondary revenue streams can include custom-branded chips for events, festival gift hampers, and sales through online health stores. Selling to government nutrition schemes can be explored.

By-products like oil residue and flour scraps will be sold to local cattle feed producers for additional income.

16. Profitability Streams

Profitability will increase with economies of scale, bulk procurement of raw materials, and brand recognition. Premium positioning as healthy millet snacks allows higher pricing and margins. Baked variants offer higher value addition than fried ones.

Diversifying flavours and packaging sizes will help target different consumer segments and price points. Direct-to-consumer sales will yield higher margins compared to wholesale distribution.

Efficient operations, waste minimisation, and local sourcing will reduce costs and enhance profitability.

17. Break-even Analysis

Parameters	Estimate
Initial Investment	INR 45,00,000
Average Price per Packet	INR 30
Average Monthly Sales Target	2,00,000 packets
Monthly Revenue	INR 60,00,000
Break-even Period	18–20 months



18. Marketing Strategies

Marketing will focus on positioning raagi chips as a healthy local snack rooted in Uttarakhand's heritage. Branding will highlight nutritional benefits, local sourcing, and eco-friendly packaging. Attractive designs and storytelling about millet farmers will build emotional connection.

Promotion channels will include social media, e-commerce, food exhibitions, and health fairs. Free sampling in schools, gyms, and tourist spots will drive consumer trials. Tie-ups with supermarkets, kirana stores, and tourist outlets will ensure wide retail presence.

Institutional marketing will target schools, hostels, hotels, and army canteens through bulk supply contracts. Collaborations with nutritionists and influencers can enhance credibility.

19. Machinery Required and Vendors

Equipment	Quantity	Purpose	Suggested Vendors/Location
Dough Mixing Machine	1	Preparing raagi dough	Rudrapur, Selaqui industrial suppliers
Sheeting and Cutting Machine	2	Shaping chips from dough	Dehradun equipment vendors
Frying Unit with Oil Filtration System	2	Frying chips	Haridwar machinery suppliers
Baking Oven (for baked variants)	1	Baking low-oil chips	Haldwani industrial suppliers
Seasoning and Coating Drum	1	Applying flavours	Selaqui MSME vendors
Pouch Packing and Sealing Machine	2	Packaging finished chips	SIDCUL Haridwar
.....Quality Testing Instruments	1 set	Moisture and safety testing	FICCI lab Dehradun



20. Environmental Benefits

The unit will promote millet cultivation which is climate-resilient, requires less water, and improves soil fertility. By replacing conventional snacks made from resource-intensive potato and corn, it will reduce agricultural pressure and greenhouse gas emissions.

Using local raw materials will reduce transportation emissions. Energy-efficient fryers and solar dryers will lower fuel consumption. Biodegradable packaging will reduce plastic pollution.

The venture will also promote sustainable eating habits and awareness of traditional nutritious crops, contributing to better public health and environmental outcomes.

21. Future Opportunities

Future opportunities include expanding the product line to include raagi-based nachos, crackers, and breakfast cereals. Exporting millet snacks to international health food markets can yield high margins. Collaborations with nutrition brands can open new channels.

Setting up dedicated millet snack kiosks in tourist hubs can build brand presence. Contract manufacturing for other health food brands can optimise capacity use. Institutional tie-ups with hospitals and schools can provide stable demand.

In the long run, this venture can become a hub for millet-based food processing in Uttarakhand, creating a sustainable value chain from farm to fork and positioning the state as a leader in millet innovation.

Disclaimer

Only a few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not imply any recommendation.

