INTRODUCTION

The dairy farming sector in Uttarakhand, India, holds immense potential for entrepreneurs seeking micro and small investment opportunities. This sector is characterized by a rich tradition of dairy farming, favorable agro-climatic conditions, and a growing demand for dairy products. This project profile aims to provide essential information and insights to prospective entrepreneurs interested in establishing and running a dairy farm in Uttarakhand.

1. PRODUCT & ITS APPLICATION

In Uttarakhand, dairy farming plays a crucial role in the agricultural sector, focusing on the production of milk and various milk-related products that are staples in the local diet and culture. The primary products include fresh cow and buffalo milk, which is not only consumed directly but also serves as a base for other dairy products like curd (yogurt), a staple in many dishes across the region. Ghee (clarified butter) holds a significant place in local cuisine and religious ceremonies, given its traditional importance and widespread use in cooking. Paneer (cottage cheese) is another popular dairy product, cherished for its versatility in both savory and sweet dishes. Moreover, the dairy industry contributes to the production of various sweets such as peda, burfi, and rasgulla, which enjoy high demand, particularly during festive seasons. This diversity in dairy production underscores the sector's vitality to Uttarakhand's economy and dietary practices.

2. DESIRED QUALIFICATION FOR PROMOTER

Prospective entrepreneurs looking to excel in the dairy farming business in Uttarakhand need to equip themselves with a variety of qualifications and resources. A foundational requirement is having a basic knowledge of dairy farming, which encompasses cattle management, nutrition, and health care practices essential for running a successful operation. Additionally, previous experience in dairy farming or completion of relevant training programs can provide a significant advantage. Financial resources are crucial for establishing and maintaining the farm's infrastructure, purchasing cattle, and covering the

day-to-day operational expenses. Access to suitable agricultural land, characterized by adequate pasture and water resources, is also vital. Beyond these tangible resources, a strong commitment and dedication to the business are indispensable for ensuring the well-being of the animals and maintaining the quality of the dairy products produced. Moreover, possessing basic marketing skills is essential for effectively promoting and distributing the dairy products within the local market.

3. INDUSTRY OUTLOOK AND TRENDS

The dairy farming industry in Uttarakhand is poised for significant growth, driven by a combination of trends and opportunities that offer promising prospects for entrepreneurs. One notable trend is the increasing demand for organic dairy products, both domestically and internationally, presenting a lucrative opportunity for farmers to adopt organic farming practices. Diversifying product lines to include value-added products such as cheese, flavored yogurt, and packaged sweets can further enhance profitability. The government of Uttarakhand supports the sector through various subsidies and initiatives, offering financial assistance and training to dairy entrepreneurs. The integration of technology, including automated milking machines and cattle health monitoring systems, stands to improve farm efficiency and productivity. Moreover, establishing small-scale milk processing units can ensure adherence to hygiene and quality standards, essential for consumer trust and market competitiveness. Expanding market reach beyond local borders to neighboring states and urban areas can significantly increase business profitability.

The broader dairy industry in India is on an upward trajectory, expected to grow at a compound annual growth rate (CAGR) of 13% from 2024 to 2032, with the market size projected to reach INR 49,953.5 billion by 2032. Starting from an estimated USD 26.11 billion in 2024, the market is anticipated to expand to USD 35.96 billion by 2029. As the largest agricultural commodity in India, the dairy sector contributes 5% to the national economy, with the demand for milk and value-added dairy products growing at over 6 to 8 percent annually. This growth is supported by factors such as a revival in economic activities, increasing per capita consumption of milk and milk products, changing dietary preferences, and rising urbanization. The dairy industry's expansion by 9-11% in 2021-22

highlights its vital role in the rural economy's growth. Opportunities for the sector include benefits such as concessional rates of Customs Duty on imported equipment and income tax deductions on capital expenditure at the rate of 150% for setting up and operating cold chain facilities or warehouses for agricultural produce storage. These factors collectively underscore the dynamic and evolving nature of dairy farming in Uttarakhand and the broader Indian context, presenting a wealth of opportunities for current and aspiring entrepreneurs in the dairy sector.

4. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY

The dairy industry in Uttarakhand is ripe with opportunities, driven by a mix of demographic, economic, and cultural factors. The state's growing population and rising disposable incomes have spurred an increased demand for dairy products, including milk and various value-added items. Uttarakhand's popularity as a tourist hotspot further amplifies this demand, with hotels, restaurants, and local markets constantly in need of high-quality dairy supplies. The cultural and religious importance of dairy in ceremonies and festivals guarantees a consistent market, while an emerging health-conscious consumer base seeks out premium dairy products. Despite these advantages, new entrants in the dairy sector may encounter challenges such as stiff competition from established farms and cooperatives, logistical hurdles in serving remote or hilly regions, and the imperative to maintain high quality standards amidst stringent regulatory requirements.

Key players in the Indian dairy sector include giants like Amul, Mother Dairy, and the Orissa State Cooperative Milk Producers Federation, among others. Within Uttarakhand, the Uttarakhand Cooperative Dairy Federation Ltd. markets its products under the "AANCHAL" brand, facing competition from local entities such as Ashish Dairy in Dehradun, Garhwal Milk Agency in Haridwar, Uttarakhand Dairy in Haldwani, and DSR Dairy Foods Private Limited, also in Dehradun. These organizations illustrate the vibrant ecosystem of dairy production and distribution in the region, highlighting both the opportunities and the competitive landscape that new dairy entrepreneurs must navigate.

5. RAW MATERIAL REQUIREMENTS

In Uttarakhand's dairy farming, choosing the right cattle breeds is paramount. Common breeds include Holstein Friesian for high milk yield, Jersey for adaptability to small-scale farming, and Sahiwal for their resilience in the local climate. Adequate feed and fodder are essential and typically comprise Napier grass, Lucerne (Alfalfa), and maize fodder. A consistent and clean water supply is imperative to maintain cattle health and milk production. Access to veterinary services is essential to ensure the well-being of the cattle and address any health concerns.

According to NABARD, a variety of locally available raw materials can increase the profitability of dairy projects. These materials include: Sorghum (jowar, Bajra, Tamarind seed.

Small-scale milk producers in developing countries typically rely on a range of locally available feed resources to sustain their dairy operations. These resources encompass natural pastures, which provide grazing opportunities for dairy cattle. Crop residues, often left over from agricultural production, serve as an additional feed source. The practice of cut-and-carry grass, where grass is cut from fields and carried to livestock, is also common. Forage crops, specifically grown to feed animals, play a crucial role in their diet. Furthermore, local feedstuffs, such as agro-industrial by-products, are utilized as cost-effective and efficient feed options. Together, these resources form the backbone of feed strategies for small-scale dairy producers, enabling them to maximize the use of available agricultural by-products and natural vegetation.

Dairy farmers may also need to purchase dry fodder and cattle feed from nearby districts. Some farmers may receive subsidized cattle feed from the Department of Animal Husbandry, but it may not be available year-round.

- Ojas Animal Feed: Address: 180, Langha Industrial Area, Sahaspur, Uttarakhand 248125. Phone: 094123 63426

- गाय की पाठशाला: Address: Lane no 2, house no 17, unnati vihar, Lower Nathanpur, Dehradun, Uttarakhand 248014. Phone: 082793 67686

6. MANUFACTURING PROCESS

The dairy manufacturing process involves several key steps. Milk collection and storage begin with the use of milking machines or hand milking, followed by immediate filtration and storage in stainless steel containers.

Pasteurization is an optional step, where the milk is heated to a specific temperature to eliminate harmful microorganisms while preserving its nutritional value. For value-added products like yogurt, ghee, or paneer, further processing is necessary. Yogurt is produced by inoculating pasteurized milk with yogurt cultures, incubating, and chilling. Ghee is derived by separating butter from milk cream and clarifying it. Paneer is made by curdling milk with an acid, separating the curd from whey.

After processing, the dairy products are packaged in hygienic containers with labels indicating product information and expiry dates. Distribution to local markets, retailers, or consumers is a crucial step, and establishing a reliable distribution network is essential. Regular quality checks and hygiene inspections are conducted to maintain product quality and comply with regulations, emphasizing the importance of a clean and sanitized production area.

This comprehensive manufacturing process ensures the production of safe, high-quality dairy products that meet consumer demand and regulatory requirements in Uttarakhand.

The Bureau of Indian Standards (BIS) provides a framework for dairy farm operations and standards for milk and milk products to ensure quality and safety. This includes specific guidelines like BIS IS 11799:1986 (R2002), which outlines recommendations for poultry farm housing in rural areas, and BIS IS 12237:1987 (Reaffirmed 2004), which details recommendations for loose housing systems for animals. For milk processing entities, the BIS mandates that any individual or plant processing over 100,000 liters of milk per day or producing 500 metric tons of milk powder annually must secure consent from the

registering authority. Additionally, the BIS oversees the ECO-Mark certification for Indian Standard Infant Milk Substitutes, highlighting a commitment to environmental and quality standards in dairy production. Dairies and gaushalas are systematically categorized based on the number of animals they house, ranging from Category-I with up to 25 animals to Category-V for establishments with more than 100 animals. This classification aids in streamlining regulatory oversight and ensuring that dairy farms of different sizes meet specific operational standards.

7. MANPOWER REQUIREMENT

Sr. No	Particulars	No. of Person	Months	Monthly Wages Amount/Person (Rs in Lakhs)	Monthly Wages - Total (Rs in Lakhs)	Annual Expenses (Rs in Lakhs)
1	Skilled	2	12	0.22	0.44	5.28
2	Semi-skilled	2	12	0.17	0.34	4.08
3	Unskilled	3	12	0.12	0.36	4.32
	Total					**13.68**

8. IMPLEMENTATION SCHEDULE

Sr. No.	Activity	Time Required (in months)
1	Acquisition of premises	3
2	Construction (if applicable)	2
3	Procurement & installation of Plant & Machinery	3
4	Arrangement of Finance	3
5	Recruitment of required manpower	1
Total time required (some activities shall run concurrently)		**6**

9. COST OF PROJECT

Sr. No.	Particulars	Amount (Rs in Lakhs)
1	Pre-operative Expenses	0.75
2	Land and Building	8.00

3	Machinery	14.82
4	Equipment and Furniture	1.70
5	Working Capital	1.50
	Total Project Cost	**26.77**

Assumed Capacity here is to produce 300 liters of milk per day.

10. MEANS OF FINANCE

Bank-term loans are assumed @ 75 % of fixed assets.

Sr. No.	Particulars	Percentage Share	Amount (Rs in Lakhs)
1	Promoter's Contribution	25%	6.69
2	Bank Finance	75%	20.08
	Total		**26.77**

11. LIST OF MACHINERY REQUIRED

A. Machinery

Sr. No.	Particulars	Unit	Unit Cost (Rs in Lakhs)	Total Amount (Rs in Lakhs)
1	Milking Machines	2	0.50	1.00
2	Bulk Milk Cooler (500 Litres)	1	1.50	1.50
3	Pasteurizer (100 Litres)	1	0.75	0.75
4	Cream Separator (100 Litres/hr)	1	0.40	0.40
5	Feed Grinder and Mixer	1	0.60	0.60
6	Manure Spreader	1	0.30	0.30
7	Milk Cans (40 Litres)	10	0.02	0.20
8	Dairy Utensils (Various)	Set	0.15	0.15
9	Cattle	10	0.65	6.50
	Total Amount in Rs.			**11.40**
	Tax, Transportation, Insurance, etc. in Rs.			2.28

	Electrification Expenses (Wiring) in Rs.	1.14
	Grand Total Amount in Rs.	**14.82**

B. Furniture & Equipment

Sr. No	Particulars	Unit	Unit Cost (Rs in Lakhs)	Total Amount (Rs in Lakhs)
1.	Office Furniture	Set	0.50	0.50
2.	Computers and Printers	2	0.35	0.70
3.	Refrigerator for Office	1	0.20	0.20
4.	Basic Laboratory Equipment	Set	0.30	0.30
Total Amount				**1.70**

1. M/S Vlaval Engineering Private Limited
   House No. 43, Hafijabad,
   Mewala Umesh Vihar T.P. Nagar, Meerut,
   Uttar Pradesh, 250002, India.
2. Osahan Tools
   Plot No. 248, Rajender Nagar Industrial Area,
   Mohan Nagar, Ghaziabad,
   Uttar Pradesh, 201001, India.
3. Ved Engineering
   B-38, Sector-60, Noida,
   Uttar Pradesh, 201301, India

12. SALES REALIZATION CALCULATION

Sr. No	Product	Quantity (in Kgs)	Sales in Percentage	Total Sales (Rs in Lakhs)
1	Cattle Feed	250	100%	75.00
	Total		100%	75.00

Sr. No.	Product	Sales in Percentage	Unit Price	Quantity (in Unit)	Total Sales (Rs in Lakhs)
1	Milk	50%	70	55000	38.50
2	Ghee	24%	450	4000	18.00
3	Paneer	14%	110	10000	11.00
4	Curd	12%	60	15000	9.00
	Total	100%			76.50

13. PROFITABILITY CALCULATIONS

Sr. No	Particulars - Amount (Rs.)	Year-I (Rs in Lakhs)
A.	Sales Realization	
	Sales (Assuming 15% growth per year)	76.50
	Other Income (Assuming constant)	
	Total Sales Realization	76.50
B.	Cost of Production	
	i) Raw Materials	41.25
	ii) Utilities (Assuming constant)	0.75
	iii) Manpower (Salaries/wages)	13.68
	iv) Administrative Expenses (Assuming constant)	0.68
	v) Selling & Distribution Expenses (Assuming constant)	0.85
	viii) Interest (Assuming constant)	2.68
	Total Cost of Production	59.89
	No of Units Produced	85,553
	Cost of Goods Sold	0.0007
	Gross Profit/Loss (A – B)	15.12
	Less: Depreciation	2.15
C.	PBIT (Profit Before Interest and Tax)	12.98
D.	Income-tax (Assuming 28% tax rate)	3.64
E.	Net Profit/Loss (C - D)	9.34

F.	Repayment	2.68
	Retained Surplus (E - F)	6.67

14. BREAKEVEN ANALYSIS

Fixed cost	**Year-I (Rs in Lakhs)**
Depreciation	2.15
Interest	2.68
Manpower	4.10
Total Fixed cost	8.93
Variable cost	
Raw materials	41.25
Utilities	0.75
Manpower	9.58
Administrative expenses	0.68
Selling & distribution expenses	0.85
Total Variable cost	53.11
Contribution margin	**20%**
Break-Even Point in Value	44.65

15. STATUTORY/GOVERNMENT APPROVALS

- **Environmental Clearances:** It is crucial to secure environmental clearances from the State Pollution Control Board to ensure operations comply with environmental standards. Additionally, adherence to the National Green Tribunal (NGT) guidelines for waste management is mandatory to mitigate environmental impacts.
- **Animal Husbandry Department:** Registration with the Department of Animal Husbandry in Uttarakhand is required. This includes committing to regular health check-ups and vaccinations for livestock as per departmental guidelines to ensure animal welfare and prevent disease outbreaks.

- **Food Safety and Standards Authority of India (FSSAI):** Obtaining an FSSAI license is essential for the legal production and sale of dairy products. This ensures that the dairy products meet the safety and quality standards set by the authority.
- **Local Municipal Corporation:** Compliance with the regulations of the local municipal corporation, especially regarding sanitation and waste disposal, is necessary to maintain public health standards and ensure the cleanliness of the dairy operation.
- **Business Registration:** The dairy farm must be registered under the Micro, Small, and Medium Enterprises (MSME) Act. This registration facilitates access to various government schemes and benefits designed to support small and medium-sized enterprises.
- **Tax Registrations:** Proper tax registrations, including Goods and Services Tax (GST) and compliance with income tax and other relevant tax laws, are crucial for the legal financial operation of the dairy farm.
- **Land and Building:** For dairy farms located outside municipal limits, obtaining the necessary approvals for land use is important to ensure the farm operates within legal zoning and land use regulations. This step is critical for setting up the farm's physical infrastructure without legal complications.

16. BACKWARD AND FORWARD INTEGRATIONS

A. Backward Integration:

Feed Management: Establishing a dedicated feed cultivation area (e.g., fodder crops) to ensure a steady supply of quality feed. Collaboration with local feed suppliers to secure bulk purchases at negotiated rates.

Cattle Breeding: Implementing a selective breeding program to improve milk yield and quality. Collaborating with veterinary colleges or animal husbandry departments for advanced breeding techniques.

Dairy Farm Equipment: Establishing relationships with equipment suppliers for regular maintenance and timely upgrades.

B. Forward Integration:

Product Development: Diversification into various dairy products like cheese, yogurt, ghee, etc., beyond just selling milk. Focus on quality and hygiene to cater to health-conscious consumers.

Distribution Network: Developing a robust distribution network for reaching local markets, retailers, and potentially for export. Exploring tie-ups with e-commerce platforms for broader market reach.

Branding and Marketing: Creating a brand identity for the dairy products. Engaging in marketing activities to build brand awareness and loyalty among consumers.

Community Engagement: Building relationships with the local community for direct sales and feedback. Initiating community-based projects to create a positive brand image and ensure sustainable practices.

17. TRAINING CENTERS AND COURSES

A. Government and University-Based Training Centers:
    1. State Agricultural Universities:
        - G.B. Pant University of Agriculture and Technology, Pantnagar: Offers various courses in animal husbandry and dairy science.
        - Veterinary Colleges: Provide specialized training in animal health and dairy management.
    2. Krishi Vigyan Kendras (KVKs):
        - Located in various districts of Uttarakhand, these centers provide practical, field-based training on agriculture and animal husbandry.

B. Online Training Platforms:
    1. E-learning Courses:
        - Various online platforms offer courses in dairy farming, animal husbandry, and agribusiness management.
        - Swayam portal (link: https://swayam.gov.in/) can also be accessed for enhanced learning on business commerce, accounting, production, marketing, and areas of entrepreneurship.

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