

DAIRY INDUSTRY DEVELOPMENT GUIDELINES

North Western Province, Sri Lanka
Strategic Framework for Sustainable Growth

Industrial Services Bureau (ISB)
Kurunegala & Puttalam Districts

EXECUTIVE SUMMARY

This comprehensive guidelines document outlines a strategic framework for the development and growth of the dairy industry in the North Western Province (NWP) of Sri Lanka, specifically targeting the Kurunegala and Puttalam districts. The dairy sector represents a significant opportunity for economic development, employment generation, and rural income enhancement in these districts.

Key objectives include:

- Increasing dairy production volume and quality standards
- Establishing integrated value chains from production to retail
- Enhancing market linkages and export opportunities
- Developing supporting infrastructure and technical capacity
- Promoting sustainable and climate-resilient practices

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1. INTRODUCTION & CONTEXT

1.1 Overview

The North Western Province, comprising Kurunegala and Puttalam districts, possesses significant natural advantages for dairy production including favorable climate, established agricultural infrastructure, and a growing rural population. The dairy industry serves as a cornerstone of food security and rural livelihood improvement.

1.2 Strategic Importance

The dairy sector is critical for achieving the following:

- Rural employment generation and income diversification
- Nutritional security and food safety for local populations
- Export potential and foreign exchange earnings
- Integration with coconut and agri-processing clusters

2. CURRENT STATE OF DAIRY INDUSTRY IN NWP

2.1 Production Capacity

The NWP currently has:

- Estimated 15,000-18,000 registered dairy farmers across both districts
- Average herd size of 4-6 animals per household
- Annual milk production of approximately 45-55 million liters
- Multiple milk collection centers and 2-3 primary dairy processing facilities

2.2 Challenges & Constraints

- Low productivity due to traditional breeding practices
- Inadequate cold chain infrastructure and post-harvest losses
- Quality & safety compliance gaps in informal sectors

- Limited market information and export linkages
- Low adoption of improved feeding and animal health practices

3. PRODUCTION GUIDELINES

3.1 Animal Selection & Breeding

Guideline A1: Transition towards high-yielding dairy breeds suitable for tropical climates.

- Prioritize Jersey, Friesian, and Holstein-Friesian crosses for highland areas
- Develop crossbreeding programs with local zebu genetics for environmental resilience
- Establish breeding cooperatives linked to veterinary extension services

Guideline A2: Implement herd health management protocols.

- Mandatory vaccination programs for FMD, brucellosis, and tuberculosis
- Regular veterinary checkups and parasite control management
- Maintain detailed animal health and production records

3.2 Feeding & Nutrition

Guideline A3: Adopt improved nutritional management practices.

- Develop farm-level fodder production systems (cut-and-carry, silage making)
- Introduce leguminous forages and improved pasture management
- Establish supply chains for cost-effective concentrate feeds and mineral supplements
- Provide training in feed formulation and ration balancing

3.3 Milk Production & Hygiene

Guideline A4: Establish milking hygiene standards.

- Farmers must use clean, food-grade vessels for milk collection and storage
- Milking should be done in designated, clean spaces with controlled access
- Implement immediate cooling protocols (within 2 hours of collection)
- Training programs on mastitis detection and prevention

4. QUALITY & SAFETY STANDARDS

4.1 Milk Quality Standards

Guideline B1: Adopt Sri Lankan Standards Institution (SLSI) and FAO/WHO Codex Alimentarius standards for raw milk.

Parameter	Specification	Test Method	Frequency
Fat Content	≥3.5% w/v	Lactometer/Babcock	Daily
Protein Content	≥3.2% w/v	Kjeldahl Method	Weekly
Somatic Cell Count	<400,000 cells/mL	Electronic Counter	Weekly
Bacterial Count	<100,000 CFU/mL	Standard Plate Count	Weekly
Antibiotics	Zero Tolerance	Rapid Test Kits	Bi-weekly
Aflatoxin M1	<50 ng/L	HPLC/ELISA	Monthly

4.2 Food Safety Management

Guideline B2: Implement HACCP (Hazard Analysis and Critical Control Points) systems at collection centers and processing facilities.

- Identify critical control points (CCPs) in the milk chain
- Establish corrective action procedures for deviations
- Maintain records and traceability throughout the supply chain

5. VALUE CHAIN DEVELOPMENT

5.1 Production to Processing

Guideline C1: Establish functional milk collection and chilling centers.

- Collection centers should be within 5-10 km of farmer clusters
- Equip with refrigerated tanks (10,000-20,000 liter capacity)
- Maintain cold chain from collection to primary processing (<4°C)
- Establish farmer cooperative ownership/management models

Guideline C2: Develop diverse dairy product portfolio.

- Liquid milk (pasteurized, flavored, fortified varieties)
- Fermented products (yogurt, probiotic drinks)
- Cheese products (both traditional and modern varieties)
- Milk powder and specialized formulations (infant, elderly nutrition)
- By-products (butter, ghee, paneer, whey-based products)

5.2 Supply Chain Integration

Guideline C3: Strengthen farmer-processor-distributor linkages.

- Establish producer groups and dairy cooperatives
- Develop supply agreements with transparent pricing mechanisms
- Create digital platforms for milk quality tracking and payment

6. MARKET DEVELOPMENT & EXPORT

6.1 Domestic Market Expansion

Guideline D1: Develop regional and national market presence.

- Establish branded product lines with local identity
- Develop distribution networks to supermarkets, retail outlets, and restaurants
- Implement promotional campaigns highlighting health and nutrition benefits
- Participate in food exhibitions and trade fairs

6.2 Export Development

Guideline D2: Target regional and international markets.

- Identify priority export products (UHT milk, cheese, milk powder, specialties)
- Obtain international certifications (ISO 22000, FSSC 22000, BRC)
- Establish connections with export markets in India, Middle East, and Southeast Asia
- Leverage trade agreements and promote Sri Lankan origin branding

7. INFRASTRUCTURE & TECHNOLOGY

7.1 Processing Facilities

Guideline E1: Establish modern dairy processing facilities.

- Minimum processing capacity of 5,000-10,000 liters per day
- Equipment: pasteurizers, separators, homogenizers, filling machines
- Water and effluent treatment systems
- Laboratory facilities for quality testing

7.2 Cold Chain Infrastructure

Guideline E2: Develop integrated cold chain systems.

- Investment in refrigerated storage at processing facilities (500-1,000 MT capacity)
- Refrigerated transportation vehicles for product distribution
- Temperature monitoring systems with digital tracking

7.3 Digital Technology Adoption

Guideline E3: Leverage digital tools for efficiency and traceability.

- Farm management software for production tracking

- Blockchain-based traceability systems for supply chain transparency
- Mobile apps for farmer communication and market information
- E-commerce platforms for direct consumer sales

8. HUMAN RESOURCE DEVELOPMENT

8.1 Farmer Training Programs

Guideline F1: Establish comprehensive capacity-building programs.

- Training modules on animal husbandry, breeding, and health management
- Nutrition and fodder production techniques
- Milk quality, hygiene, and safety protocols
- Cooperative management and business skills
- Climate-smart agricultural practices

8.2 Technical and Skilled Workforce

Guideline F2: Develop skilled workers for processing and quality control.

- Formal training programs for technicians and quality controllers
- Internship programs with dairy processing facilities
- Certification programs aligned with international standards

8.3 Extension Services

Guideline F3: Strengthen veterinary and technical extension services.

- Deploy veterinarians and animal husbandry specialists to district level
- Establish demonstration farms showcasing improved practices
- Regular field days, workshops, and farmer-to-farmer knowledge exchange

9. FINANCIAL SUPPORT MECHANISMS

9.1 Credit & Financing

Guideline G1: Facilitate access to affordable financing.

- Concessional loans for dairy farm establishment and upgrades
- Equipment financing schemes for processing facilities
- Working capital facilities for dairy cooperatives
- Encourage linkages with SMIB Bank and other development financial institutions

9.2 Subsidy & Grant Programs

Guideline G2: Implement targeted subsidy and grant programs.

- Capital grants for improved breed purchase and infrastructure (30-50% subsidy)
- Technology adoption incentives (silage equipment, coolers, etc.)
- Training and certification subsidies for farmers and workers
- Quality premiums for milk meeting international standards

9.3 Risk Management

Guideline G3: Establish risk mitigation mechanisms.

- Livestock insurance schemes (mortality and disease coverage)
- Price stabilization mechanisms and support schemes
- Emergency funds for climate and disease-related losses

10. SUSTAINABILITY & ENVIRONMENTAL MANAGEMENT

10.1 Waste Management & Circular Economy

Guideline H1: Implement circular economy practices in dairy operations.

- Convert dairy manure into biogas and compost for sustainable energy and soil fertility
- Whey and wastewater treatment and reuse in farming
- Packaging optimization to reduce plastic waste; promote biodegradable alternatives

10.2 Climate Adaptation & Mitigation

Guideline H2: Adopt climate-smart dairy farming practices.

- Promote drought-resistant forage varieties and water conservation strategies
- Improved breeding for heat-tolerant dairy breeds suited to tropical climate
- Reduced methane emissions through optimized feed formulations
- Farm-level climate monitoring and advisory services

10.3 Biodiversity & Water Management

Guideline H3: Protect environmental resources.

- Maintain riparian buffers and water source protection zones
- Promote agroforestry and biodiversity-enhancing practices on dairy farms

- Effluent and runoff management protocols to prevent water contamination

11. IMPLEMENTATION ROADMAP

11.1 Phase 1 (Year 1-2): Foundation & Capacity Building

- Establish dairy industry working group with multi-stakeholder representation
- Conduct baseline survey and dairy cluster mapping in Kurunegala and Puttalam
- Launch farmer training programs on improved production and quality standards
- Establish 3-5 demonstration farms showcasing best practices
- Upgrade 2 existing milk collection centers with cooling infrastructure

11.2 Phase 2 (Year 2-3): Infrastructure & Market Development

- Establish 1 new modern dairy processing facility (5,000-10,000 L/day capacity)
- Develop dairy cooperative networks and producer organizations
- Launch branded product line with domestic market distribution
- Implement quality assurance systems and obtain certifications
- Establish digital platform for farm management and traceability

11.3 Phase 3 (Year 3-5): Consolidation & Export

- Scale up production through improved genetics and farm management
- Establish export quality standards and international certifications
- Develop export markets in India, Middle East, and SAARC countries
- Establish additional processing facilities for specialized products
- Implement sustainability and climate adaptation programs farm-wide

11.4 Key Performance Indicators (KPIs)

Metric	Baseline (2026)	Target (2031)
Annual Milk Production (Million L)	50	85-100
Number of Dairy Farmers	15,000-18,000	25,000-30,000
Average Farm Productivity (L/day)	8-10	15-18
Milk Collection Centers	12-15	25-30
Processing Facilities	2-3	4-5
Farmers Trained (Cumulative %)	5%	60-70%
Export Value (USD Million)	0.5	15-20
Farmer Income Increase (%)	Baseline	+150-200%

CONCLUSION

The dairy industry represents a transformational opportunity for the North Western Province. By implementing these comprehensive guidelines across production, quality, infrastructure, market development, and sustainability dimensions, the ISB can catalyze significant economic growth, rural livelihood improvement, and food security enhancement.

Success requires coordinated action across multiple stakeholders — farmers, cooperatives, processors, government agencies, development finance institutions, and technology providers. The phased implementation roadmap provides a realistic pathway to scale dairy production from 50 million liters annually to 85-100 million liters by 2031, while simultaneously improving quality standards and developing robust export markets.

The Industrial Services Bureau, as the coordinating agency, commits to facilitating investment, capacity building, market linkages, and ecosystem support necessary to realize this vision.

Industrial Services Bureau
Kurunegala & Puttalam Districts