POLICY PAPER

ON

"ROADMAP FOR DAIRY SECTOR DEVELOPMENT IN THE STATE OF NAGALAND"

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ICAR – National Research Centre on Mithun
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ICAR – National Academy of Agricultural Research Management, Hyderabad, Telangana
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Credits & Acknowledgements

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ICAR – NAARM, Hyderabad	Collaborating Institution
ICAR – CIRC, Meerut	Collaborating Institution
Department of AH&VS, Government of Nagaland	Collaborating Institution

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Document Preparation

This Policy Paper has been compiled and drafted by the Policy Working Group constituted at the close of the brainstorming session on the recommendation of the Adviser, CAWD & Taxes, Government of Nagaland. The document draws on presentations made by ICAR-NRCM, ICAR-CIRC, and ICAR-NAARM, field inputs from progressive farmers, and peer-reviewed scientific literature. Data have been sourced from the Basic Animal Husbandry Statistics (BAHS) 2024, the 20th Livestock Census 2019, the Nagaland Economic Survey 2024-25, and publications of the Department of Animal Husbandry and Dairying (DAHD), Government of India.

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List of Abbreviations

Abbreviation	Full Form
AH&VS	Animal Husbandry & Veterinary Services
AHIDF	Animal Husbandry Infrastructure Development Fund
AI	Artificial Insemination
ASF	Animal Source Foods
BAHS	Basic Animal Husbandry Statistics
BMC	Bulk Milk Cooler
CAGR	Compound Annual Growth Rate
CSR	Corporate Social Responsibility
DCS	Dairy Cooperative Society
DAHD	Department of Animal Husbandry and Dairying
DIDF	Dairy Infrastructure Development Fund
DIMUL	Dimapur Milk Union Ltd.
ETT	Embryo Transfer Technology
FPO	Farmer Producer Organization
FSSAI	Food Safety and Standards Authority of India
GHG	Greenhouse Gas
GHP	Good Hygienic Practices
GMP	Good Manufacturing Practices
GoN	Government of Nagaland
GSDP	Gross State Domestic Product
ICAR	Indian Council of Agricultural Research
ICAR-CIRC	ICAR – Central Institute for Research on Cattle
ICAR-NAARM	ICAR – National Academy of Agricultural Research Management
ICAR-NRCM	ICAR – National Research Centre on Mithun
ICMR-NIN	Indian Council of Medical Research – National Institute of Nutrition
IFS	Integrated Farming System
JICA	Japan International Cooperation Agency
KVK	Krishi Vigyan Kendra
LPC	Livestock Procurement Centre

Abbreviation	Full Form
MAITRI	Multipurpose AI Technician in Rural India
MILKCON	Milk Cooperatives of Nagaland
MoFAHD	Ministry of Fisheries, Animal Husbandry & Dairying
MSP	Minimum Support Price
MUDRA	Micro Units Development and Refinance Agency
NABARD	National Bank for Agriculture and Rural Development
NDDB	National Dairy Development Board
NER	North-East Region
NLDB	Nagaland Livestock Development Board
NLM	National Livestock Mission
NPDD	National Program for Dairy Development
PPP	Public-Private Partnership
SHG	Self-Help Group
SNF	Solids-Not-Fat
UHT	Ultra-High Temperature
VFA	Veterinary Field Assistant

Executive Summary

Nagaland's dairy industry is at a critical juncture with the state's milk production dropping by 36% during the past ten years. The annual milk production decreased from 80,610 tonnes in 2013-14 to 51,680 tonnes in 2023–24. Besides this, per capita milk availability has also deteriorated to 65 grams of milk which is less than 14 per cent of the national average of 471 grams per day (BAHS, 2024). Alongside these, the contribution of the livestock sector to the state's GSDP (Gross State Domestic Product) has also fallen significantly from 7.31 per cent in 2013 to 2.19 per cent in 2024. Altogether, these changes indicate the steep decline of a sector that serves as one of the main sources of income for most rural households in Nagaland. In this context, a policy paper "Roadmap for Dairy Sector Development in the State of Nagaland (2026–2035)" was conceived during a brainstorming workshop organized on 02 February 2026 at KVK Phek Porba Nagaland. The workshop was participated by senior officials from Government of Nagaland, ICAR scientists, stakeholders from state Milk Union, extension specialists, and progressive farmers who deliberated on the constraints, identified the priorities, and proposed a 10-year path for the revival of the dairy sector in the state. Special emphasis was given to diversification of dairy animal species, conservation and genetic improvement of indigenous and locally adapted germplasm including Thu-tho cattle and Mithun to prevent genetic erosion while enhancing dairy productivity.

The Policy Paper identifies nine strategic priority areas of intervention:

1. Development of Dairy Clusters Across Agro-Ecological Regions adopting a cluster-based model tailored to hilly, peri-urban, and plain areas.
2. Breeding Strategies and Genetic Improvement, dual policy of indigenous breed conservation in hilly areas (Thu-tho cattle) and introduction of crossbred cattle in peri-urban areas and plains.

3. Feed and Fodder Resource Development, state-level fodder policy, agroforestry integration, silage and hay promotion.
4. Strengthening Veterinary and Animal Health Services through decentralized para-veterinary delivery systems (e.g., Gopal Mitra model), mobile veterinary clinics and telemedicine.
5. Diversification of Dairy Animal Species including Mithun, buffalo and goat alongside indigenous cattle, through development and promotion of niche milk products
6. Access to Institutional Credit and Financial Support to farmers through loan-linked cooperative models and existing instruments such as NPDD, AHIDF, NLM, NABARD, MUDRA, etc.
7. Strengthening Milk Procurement and Dairy Cooperatives through Minimum Support Price mechanism and quality-based pricing
8. Improving Post-Farm Gate Infrastructure and Processing - cold chain, value addition, FSSAI compliance, decentralized processing.
9. Human Resource Development and Capacity Building to enhance skilled workforce, institutional training, educational programmes across the dairy value chain.

Cross-cutting priorities enshrined in the roadmap are supported by evidence that milk consumption improves child nutrition and learning outcomes. At the same time, targeted research is required to assess the prevalence of lactose intolerance in local populations. Engagement of private sector and initiatives under corporate social responsibility (CSR) can help bridge the gaps in investment essentially required to revive dairying in the state. The Roadmap is structured as a phased implementation plan consisting of three stages: Foundation (2026–28), Consolidation (2028–31), and Scaling (2031–35). The total estimated investment requirement is approximately INR 600 crore over ten years. Successful implementation of the project requires a strong political will, sustained policy support, regular budgetary allocations from the state government, complementary activities under centrally sponsored schemes, effective coordination among institutions such as DAHD/ICAR/NABARD, and active participation of communities through cooperatives and Farmer Producer Organizations.

Nagaland has distinct advantages of rich biodiversity, traditional low-input livestock systems and the potential for organic and natural farming. This Roadmap presents a pathway to build on these advantages to develop a revitalised, resilient dairy economy that improves rural livelihoods, enhances nutritional security and reduces the state's dependence on dairy imports from outside.

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1. Background and Rationale

1.1 Nagaland: A Socio-Ecological Profile

The State of Nagaland, situated in the north-eastern part of India, occupies approximately 16,579 km² of predominantly mountainous terrain, with elevations ranging from about 194 metres in the plains around Dimapur to over 3,840 metres in the Saramati massif along the Myanmar border. The state is characterised by lush subtropical and temperate forests that cover more than two-thirds of its geographical area (State of Forest Report, 2023).

Nagaland's population is expected to be approximately 2.25-2.28 million (2024-2025), and the state is still predominantly rural, with roughly 70-75% of the people residing in rural areas. Scheduled Tribes represent about 86% of the population and they include 17 officially recognized indigenous tribes. Among the tribes are Konyak, Ao, Angami, Lotha, Sumi, Chakhesang, Phom, Chang, Khiamniungan, Pochury, Rengma, Sangtam, Yimkhiung, etc. Each tribe has its own cultural identity, customary land tenure system, and agro-pastoral tradition.

Almost 70% of Nagaland's population is directly or indirectly engaged in agriculture and livestock is an integral component providing economic stability and nutritional security in the state (Nagaland Agriculture Policy 2025). Major farming practices include jhum or shifting cultivation and terrace farming in the highlands, where rice is the predominant crop. The state's GSDP at current prices was estimated at Rs. 45,989 crores in 2024-25 (Advance Estimates), and the economy is expected to reach Rs. 86,772 crores (USD 10 billion) by 2029-30 (Nagaland Economic Survey 2024-25), a target that implies development of every sector, including animal husbandry and dairying.

1.2 Animal Husbandry and the Dairy Sector in Context

In Nagaland, animal husbandry is deeply tied to agriculture and plays a major role in providing food security, additional income, and cultural values

of rural families. Different types of livestock such as cattle, goat, pig, poultry and Mithun (*Bos frontalis*) are part of the family production systems all over the state. Nevertheless, the share of livestock sector in Nagaland's GSDP has drastically declined - from 7.31% in 2013 to 2.19% in 2024 - indicating that the sector is structurally weakening and requires policy support, investment, infrastructure development and institutional strengthening urgently (BAHS, 2024).

Animal-sourced foods (ASF) are an integral part of the Naga traditional diet with pork, poultry meat, and eggs being the most commonly consumed commodities. On the other hand, milk and dairy products have always been at the periphery of Naga food culture even though they are known as excellent sources of calcium, phosphorus, vitamin B12, and high-quality proteins. Much of the milk and dairy products consumed in urban areas - particularly around Dimapur and Kohima - is brought from outside to meet the existing demands.

The consequences of a low dairy diet are a crucial nutritional issue. The per capita availability of milk in Nagaland was just 65 grams per day in 2023–24, far below the national average of 471 grams and the ICMR-NIN recommended intake of 300 grams per day (BAHS, 2024). Previous reports have indicated a gap of nearly 79.54% in terms of ICMR recommendations which is the second largest deficit among the North-East Indian states, after Mizoram (about 81.78%) (Mili et al. 2024). Promoting dairy production and consumption is therefore important to improve calcium and protein intake, decrease childhood stunting and wasting, and enhance nutritional security, especially for children, women, and the elderly.

1.3 Genesis of the Policy Paper

In response to the decline in the dairy sector and the need for strengthening livestock-based livelihood opportunities in Nagaland, ICAR National Research Centre on Mithun (ICAR-NRCM) and KVK, Phek organized a Brainstorming Session on "Dairy Sector Development in Nagaland" on 2 February 2026 at KVK Phek, Porba, Nagaland. The program was held in collaboration with ICAR-National Academy of Agricultural

Research Management (ICAR-NAARM), ICAR- Central Institute for Research on Cattle (ICAR-CIRC) and the Department of Animal Husbandry and Veterinary Services (AH&VS), Government of Nagaland.

Senior state government officials including the Hon'ble Adviser (CAWD & Taxes), the Director of AH&VS, additional and joint directors; the Managing Director of DIMUL; ICAR scientists; KVK subject matter specialists; and progressive dairy farmers from Phek district participated in the brainstorming session. Presentations were made on the current status of the dairy sector in Nagaland, production and supply chain constraints, role of cooperatives, pricing of milk and challenges in milk procurement, opportunities for scaling up milk processing and value addition, and the advancements in dairy cattle production practices. The presentations were followed by open discussions, during which key problems in Nagaland's dairy sector, prospects for investment, challenges and policy options were identified.

At the conclusion of the meeting, the Hon'ble Adviser (CAWD & Taxes) suggested to prepare a comprehensive policy paper to consolidate the deliberations and recommendations that emerged from the meeting. The document is intended to serve as a reference for various stakeholders including the State and Central government agencies, development partners and financial institutions, while planning and implementing interventions aimed at strengthening the dairy sector of the state.

1.4 Scope and Objectives of the Roadmap

This Roadmap addresses the entire dairy value chain covering key components of the sector from animal breeding, feeding and farm-level production, to milk procurement, processing, value addition, market development and consumer awareness. It's designed to be:

- Evidence-based: interpretation of data from BAHS, Livestock Census, published literature, and stakeholder consultations undertaken during the brainstorming session.

- Contextually appropriate: reflecting Nagaland's unique ecological & socio-cultural landscape and institutional infrastructure.
- Actionable: structured around specific interventions, responsible agencies, and implementation timelines.
- Strategically aligned: Consistent with relevant national programs (NPDD, AHIDF, NLM, Rashtriya Gokul Mission), Nagaland Vision 2030, Nagaland Agriculture Policy 2025 and the UN Sustainable Development Goals.

The Roadmap provides an actionable framework:

- To improve genetic quality and production performance of dairy animal populations through planned breeding interventions
- To build robust feed, fodder, veterinary, cooperative, and processing infrastructure.
- To promote and expand organic and natural dairy farming in suitable areas without disrupting existing production systems.
- To develop niche, organic, and natural dairy markets leveraging Nagaland's biodiversity and traditional practices.
- To facilitate greater access to institutional credit and financial inclusion for dairy farmers.
- Strengthen the dairy value chain through digital technologies and public-private partnerships.
- To enhance nutritional security by increasing per capita availability of milk and diversification of dairy consumption.
- To strengthen human resource development and capacity building across the dairy value chain.

2. Current Status of the Dairy Sector in Nagaland

2.1 Milk Production Trends

Milk production in Nagaland amounted to a total of 51,680 tonnes in the year 2023–24. Out of the total production 49,900 tonnes came from cows and the rest 1,780 tonnes from buffaloes. The total production declined by 36% during the ten-year period, from about 81 thousand tonnes in 2013-2014. After a brief period of relative stability between 2013–14 and 2016–17, milk production fell sharply from 79.4 thousand tonnes in 2016–17 to 61.6 thousand tonnes in 2019–20, and further to 51.7 thousand tonnes in 2023–24. Although northeastern region recorded a slow growth in milk production as compared to national average, Nagaland had even more significant contraction in milk production during this period. The compounded annual growth rate (CAGR) of milk production in the North-East region was merely 1.59% during that time as against 3.83 % for the entire India (Mili et al. 2024).

The long-term and steep decline of the sector in Nagaland is the result of a combination of factors, which include a sharp decrease in the number of dairy animals, low productivity per animal, loss of traditional livestock management practices, the change in land-use pattern leading to less availability of grazing area, rise in input costs, and inadequate market incentives for dairy farming.

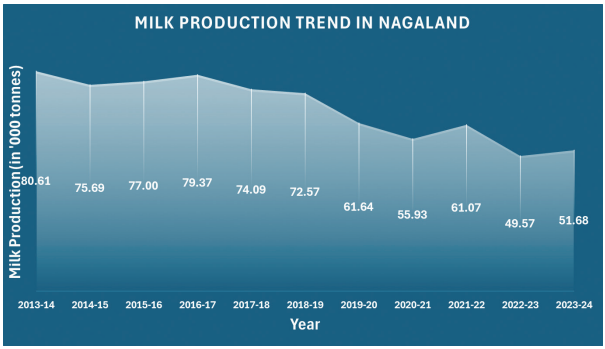

Fig 1. Milk production trend in the state of Nagaland

2.2 Per Capita Milk Availability

Milk availability per capita in Nagaland

has been consistently declining in Nagaland, mirroring the production patterns. In 2013-14, milk availability was 95 grams per person per day; whereas in 2023–24, it had dropped to 65 grams per day, which is more than a 31 % decrease over ten years. The difference with national trends is quite remarkable. The country's average per capita milk availability went up from 307 grams per day in 2013-14 to 471 grams per day in 2023–24 (BAHS, 2024), thus widening the gap between Nagaland and the rest of the country. Even at its peak in 2011–12, when per capita availability reached 108 grams per day, the state was far below the national average of 290 grams per day. By 2023–24, per capita milk availability in Nagaland was only about 14 % of the national average, highlighting significant supply deficit. As a result,

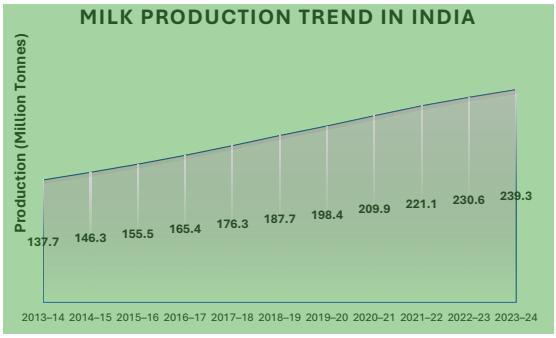

Fig 2. Milk production trend in India

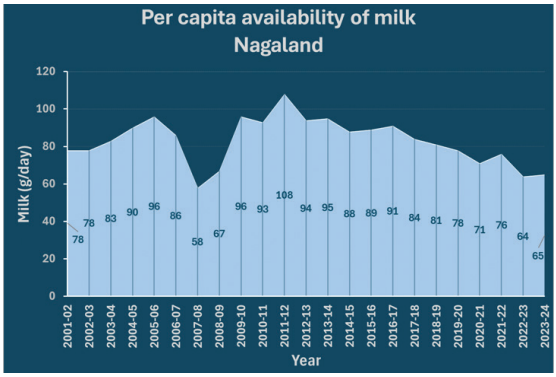

Fig 3. Per capita availability of milk in Nagaland

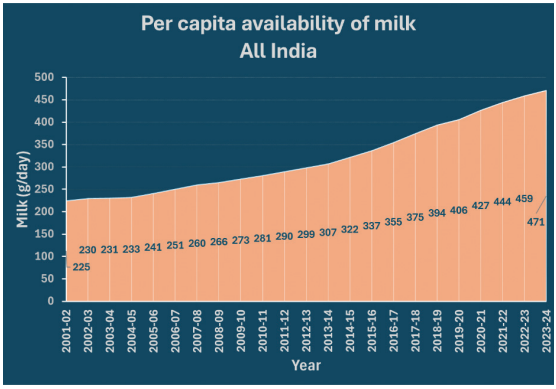

Fig 4. Per capita availability of milk in India

the state has become increasingly dependent on milk and dairy products are sourced from outside, with implications for price stability and fiscal outflows.

Compared to the daily recommended intake of 300 grams as per ICMR-NIN, the state's milk availability is lacking by 79.54 % approximately, which means milk consumption is very low for most of the population in the state (Mili et al. 2024).

2.3 Dairy Animal Population

Table 1. Species-wise Livestock Population Changes in Nagaland

Species	2012 Census	2019 Census
Cattle (Total)	234,974	78,296
Buffalo (Total)	32,648	15,654
Mithun (*Bos frontalis*)	35,258	23,123
Goat	99,350	31,602

Trends in dairy animal populations provide important context to the decline in milk production. Livestock census data showed a substantial reduction in the population of key dairy species of Nagaland between 2012 and 2019. The cattle population declined by nearly 67 % while buffaloes recorded a decrease of >50 %. This contraction in cattle and buffalo populations had a direct and adverse impact on milk production in the state. Mithun, which holds significant economic and cultural importance in Nagaland, also recorded a decline of about 34 %. Although Mithun is not traditionally managed for milk production, its declining numbers reflect broader pressures on livestock production systems, including reduced access to grazing areas, changing land-use patterns and weakening of traditional management systems. Goat populations, which had shown positive growth previously also declined steeply during this period. The 20th Livestock Census (2019) set the above baselines. The 21st Livestock Census was rolled out all across the country in October 2024, and Nagaland's results will give updated population figures necessary for focused planning of interventions.

The combined effect of declining dairy animal populations and low productivity per animal has constrained milk output in the state. The state

is witnessing a shrinking livestock base and reduced farmer engagement in dairy activities. Without a stable and growing population of dairy animals, improvements in feeding, breeding, and management cannot translate into sustained gains in milk production. Overall, the trends in milk production, per capita availability, and dairy animal population point to a structural weakening of the dairy sector in Nagaland. This underscores the need for focused policy attention to rebuild the dairy animal base, improve productivity under local conditions, and strengthen farmer confidence in dairying as a viable livelihood option.

2.4 Dairy Infrastructure

Most of the commercial dairy infrastructure in Nagaland is located in and around Dimapur, which houses the Dimapur Milk Union Ltd. (DIMUL) - the major formal milk processing and procurement company. DIMUL runs a processing plant and a network of milk procurement, but its operations are far from full capacity mainly because of insufficient and irregular supply of raw milk. Besides DIMUL, two other Milk Unions are located, one at Kohima (Kohima District Cooperative Milk Producers' Union Ltd.) and the other at Mokokchung (Mokokchung District Cooperative Milk Producers Union). These two are also struggling with underutilization of their capacities, mainly due to issues related to pricing mechanisms for milk procurement.

The cold chain infrastructure throughout the state remains inadequate. Bulk Milk Coolers (BMCs) are few and very unevenly distributed while milk transportation in refrigerated vehicles from farm to the plant is very limited; These constraints increase the risk of post-collection milk losses and affect the efficiency of milk handling and marketing systems. Dairy processing and value-addition facilities are concentrated largely in Dimapur, with limited infrastructure available in other districts. The state also lacks accredited (ISO/NABL) quality testing laboratories leading to most tests being done in Guwahati resulting in tardiness, higher costs, and restricted access to quality assurance. Limited access to testing services can constrain

quality assurance and regulatory compliance, including adherence to Food Safety and Standards Authority of India (FSSAI) regulations resulting in loss of consumer confidence. Setting up local accredited laboratories would facilitate better control, quality assurance, and increase the trust of organizations among consumers.

2.5 Demand-Supply Gap and Import Dependency

Population growth and increasing urbanisation are the main factors behind the gradual increase in the consumption of milk and dairy products in Nagaland. Estimates based on present population status and the recommended per capita dietary intakes indicate a substantial gap between demand and supply. Large portion of liquid milk, paneer, butter, cheese, and UHT products consumed in urban Nagaland comes from Assam, West Bengal, Punjab, and other national brands.

The brainstorming session indicated that farmer participation in cooperative milk procurement systems is often influenced by local market price. When the price of fresh liquid milk, in the local markets is higher than those offered by Milk Unions, producers tend to prefer the former than the latter. In addition, without a minimum support price mechanism, the formal procurement system loses further ground in terms of its competitiveness.

2.6 Institutional Framework

The Department of Animal Husbandry & Veterinary Services (AH&VS), Government of Nagaland, is the main state agency responsible for animal husbandry and dairy development. Other key institutions include Nagaland Livestock Development Board (NLDB), Milk Unions, financial and research organization. ICAR NRC on Mithun located in Nagaland serves as the country's dedicated research institute for Mithun and contributes to research, technology development and extension activities. KVKs across the state offer services like technology transfer, farmer training and frontline demonstration while NABARD facilitates access to rural credit and cooperative development initiatives. Despite the

presence of these institutions, there is lack of coordination among them, resulting in limited extension services in remote areas. Further the shortage of veterinary personnel, particularly in difficult-to-access areas, constrains the delivery of animal healthcare services. Limited access to veterinary care can affect disease surveillance, preventive vaccination programs, and timely treatment of livestock. These challenges assume greater significance given Nagaland's international border, which necessitates continued vigilance and preparedness for the prevention, detection and control of transboundary animal diseases (TADs).

3. Strategic Framework: Nine Pillars of Dairy Development

The stakeholder consultations made during the brainstorming session, supported by relevant scientific data and review of ongoing programs and policies, resulted in the identification of nine strategic pillars for the development of dairy sector in Nagaland. Together, these pillars form the framework of the Nagaland Dairy Roadmap 2026–2035. Each pillar presents strong rationale, priority interventions, responsible agencies, and quantifiable targets for 2035. The targets were determined based on the production potential, infrastructure requirements and programmatic needs identified during the brainstorming session. These targets were defined by the experience of dairy development initiatives in other states but adapted to the prevailing production systems and ecological conditions of Nagaland.

Pillar 1: Development of Dairy Clusters Across Agro-Ecological Regions

1.1 Rationale

Nagaland's diverse landscape comprising hilly areas, peri-urban zones, and plains calls for a localized approach to dairy development. A one-size-fits-all policy, blindly imposed on all districts, will not be able to comprehensively take into account differences in aspects such as altitude, availability of animal feed, market access, infrastructure, and local cultural practices. A cluster-based approach offers a framework for organising dairy development in a manner that reflects local production conditions and market linkages. Under this approach, milk production, procurement, chilling, processing, and marketing activities are developed within defined geographic clusters, enabling closer integration of value chain functions. Such an approach can improve operational efficiency, facilitate service delivery, and strengthen market access for dairy producers.

1.2 Key Interventions

- Identify and map potential dairy clusters around three different agro-ecological zones (a) plains (Dimapur and nearby areas), (b) peri-urban zones (Kohima, Mokokchung, etc.) and (c) hilly areas (mid and high altitude rural areas).
- Promote the establishment of medium- and large-scale dairy farms in plains and peri-urban areas, integrated with cooperative milk procurement systems, taking advantage of fodder production potential, market access and road connectivity.
- Promote community-based smallholder clusters in hilly areas with shared housing, collective fodder plots, community grazing lands and village-level Bulk Milk Coolers. Also, encourage integrated farming of cattle, buffalo, Mithun, and goats within the scope of traditional farming.
- Establish cluster-level milk collection centres linked to chilling and processing facilities through hub-and-spoke model to improve milk aggregation and handling efficiency.
- Facilitate and encourage private sector participation through public-private partnerships (PPP), by offering different kinds of incentives like facilitated land lease, electricity subsidy, purchasing of genetically superior dairy animals, and insurance/risk coverage schemes.
- Promote integration of dairy production with paddy-based crop systems to utilise crop residues and improve farm sustainability.
- Implement dairy cluster development in a phased manner, beginning with consolidation of the existing Dimapur milk shed (Phase 1), followed by expansion in peri-urban areas such as Kohima and Mokokchung (Phase 2), and subsequently to rural areas based on infrastructure readiness and market potential (Phase 3).

1.3 Implementing Agencies

Department of AH&VS (GoN), NLDB, DIMUL/MILKCON, ICAR-NRCM, NABARD, Private Sector Partners.

1.4 Targets (by 2035)

- At least 50 functioning dairy clusters across 10 districts. Each cluster may have 5-8 villages/Dairy Cooperative Societies.
- 300 functional milk collection centres (Dairy Cooperative Societies) with chilling infrastructure.
- 1000 medium-scale dairy farms (10–30 animals) established.

Pillar 2: Breeding Strategies and Genetic Improvement

2.1 Rationale

Low genetic potential of existing cattle and buffalo populations is one of the primary reasons for poor milk productivity in Nagaland. The local Thu-tho cattle breed is primarily a meat animal, while its milk yield is quite limited and occasionally used for household consumption. Improving Thu-tho cattle for milk production through crossbreeding is not a viable option since it risks irreversible dilution of this unique germplasm adapted to Nagaland's hilly terrain, climate, and free-range farming conditions. The loss of such locally adaptive genetic resources would undermine the biodiversity and conservation efforts in the state, particularly under climate variability and disease challenges. Therefore, improving dairy productivity through genetic means must be pursued in a manner that explicitly safeguards indigenous germplasm. A dual-track strategy is essential: (i) conservation and selective improvement of Thu-tho and other indigenous populations in ecologically appropriate zones, and (ii) introduction of crossbreds only in peri-urban and plain areas where intensified production systems are feasible. The State Livestock Breeding Policy (to be formulated at the outset of the project — see 5.2 Year 1 Priority Actions) will provide the regulatory framework for this balance.

2.2 Key Interventions

- Formulate a State Cattle Breeding Policy, establishing breed-specific zones matching production systems: conservation and selective improvement of Thu-tho cattle in hilly and tribal areas; crossbred cattle

(Holstein Friesian × Local; Jersey × Local) and graded buffaloes in peri-urban and plains areas.

- Establish Livestock Procurement Centres (LPCs) to facilitate supply of quality crossbred and purebred dairy animals from established breeding programmes.
- Procure and distribute at least 20,000 crossbred cows to farmers across ten districts. Each crossbred cow shall be provided with a subsidy of Rs. 25,000. The subsidy shall be available for a maximum of two crossbred cows per farmer, benefitting 10,000 farmers over a period of 5 years.
- Enhancing Artificial Insemination (AI) services: ramp up AI coverage, enhance semen quality and availability, improve the capacity of Gopal Mitras and MAITRIs for last-mile AI delivery, and systematically track conception rates.
- Introduce Sexed Semen Technology for priority dairy animals to accelerate production of female calves.
- Pilot Embryo Transfer Technology (ETT) for elite dairy cattle multiplication through ICAR-CIRC collaboration.
- Implement reproductive health management programmes: training on heat detection, AI timing, repeat-breeder treatment protocols, and post-calving management.
- Implement systematic Animal Identification and Performance Recording (AIPR) systems such as ear tagging, milk recording, and calving records to create a reliable database for genetic evaluation and improvement.
- Genetic improvement of indigenous cattle genetic resources (Thu-tho).
- Initiate research on the functional and nutritional properties of Mithun milk to support market differentiation and premium positioning.

2.3 Implementing Agencies

Department of AH&VS (GoN), ICAR-NRCM, ICAR-CIRC, ICAR-NBAGR, KVKs, NLDB.

2.4 Targets (by 2035)

- State Cattle Breeding Policy notified within 12 months of roadmap adoption.
- AI coverage increased to 40 % of breedable females.
- 500 Gopal Mitras/MAITRIs trained and deployed.
- Thu-tho breed recording and conservation program operational.

Pillar 3: Feed and Fodder Resource Development

3.1 Rationale

Feed and fodder availability is a major constraint affecting dairy productivity in Nagaland. The state faces deficits in green fodder, dry fodder, and concentrate feed, largely due to hilly terrain, limited cultivable land, and seasonal fluctuations in biomass availability. These constraints lead to underfeeding, low milk yields, and reduced efficiency of other interventions such as breed improvement and animal health services. An animal that is underfed yields less milk than its genetic potential, shows poor reproductive performance and weakened health. Unless an adequate supply of feed is ensured, investment in enhancing genetics or providing veterinary services will fail to yield the expected benefits.

3.2 Key Interventions

- Develop a State Policy for Fodder Development by earmarking a portion of the agricultural land (15-20 %) suitable for fodder production and selecting high-yield, climate-resilient fodder varieties that match the agro-climatic zones (e.g., Napier, Guinea grass, CO-4, leguminous forages, etc.).
- Encourage the cultivation of perennial fodder grasses and the establishment of community fodder plots at the village level through Village Council involvement; Establishing one dedicated fodder plot per village in the dairy clusters will improve feed availability significantly.
- Integrate agroforestry models with fodder trees (e.g., Leucaena,

Sesbania, Moringa, Subabul) to serve as year-round sources of green biomass and to help reduce seasonal shortages.

- Raise awareness among farmers on the benefits of crop residue treatment, particularly Urea-Molasses Treatment (UMT) of paddy straw, and adoption of the technique in the field.
- At the village level, promote the making of silage from maize, sorghum, and Napier grass; set up small-scale silage units and encourage the collective production of silage by farmer groups and cooperatives.
- Support the short-term import of quality silage and concentrate feed from neighbouring states (Meghalaya, Mizoram) with targeted subsidies to address immediate feed deficits while local production is increased in the long term.
- Establish small-scale feed processing units (concentrate mixing and pelleting) across dairy clusters to produce balanced rations at affordable cost.
- Develop and disseminate Total Mixed Ration (TMR) formulations suited to local feed resources and dairy animal requirements, through front-line demonstrations.
- Train farmers on scientific ration balancing, mineral supplementation, and Integrated Farming System (IFS) approaches combining dairy with crop and horticultural components.

3.3 Implementing Agencies

Department of Agriculture (GoN), Department of AH&VS (GoN), ICAR-NRCM, KVKs, Village Councils, Cooperative Societies.

3.4 Targets (by 2035)

- Fodder Development Policy notified and implemented in all dairy clusters.
- 300 community fodder plots established.
- 5 medium-scale feed processing units operational.
- Green fodder deficit reduced by 50 % in the Dimapur milk shed.

Pillar 4: Strengthening Veterinary and Animal Health Services

4.1 Rationale

Effective animal health services are important components of a productive and profitable dairy production system. In Nagaland, access to veterinary services remains uneven, with facilities and service delivery concentrated in more accessible locations. As a result, livestock owners in remote and hilly areas often face limited access to vaccination, deworming, and therapeutic services. The brainstorming session revealed that among the main issues are low conception rates from AI, high incidence of repeat breeding, disease outbreaks such as FMD and other TADs (considering the porous border of the state with Myanmar), inadequate vaccination coverage, and little/no systematic disease surveillance. It is therefore necessary to improve the veterinary service delivery in order to protect livestock and raise productivity.

4.2 Key Interventions

- Deploy Community Animal Health Services: Train the Gopal Mitras and community-based para-veterinary workers who will be able to provide basic veterinary services such as vaccination, deworming, disease reporting, sample collection, ear tagging, artificial insemination, pregnancy diagnosis and farmer advisory at the village level. The training and deployment of Gopal Mitras as basic para-veterinary service providers for remote villages should be set up under the MAITRI initiative of the Department of Animal Husbandry and Dairying (DAHD).
- Deploy Mobile Veterinary Units (MVUs) equipped with diagnostic tools, medicines, and AI equipment to provide scheduled services to remote cluster areas.
- Strengthen existing Veterinary Dispensaries and Sub-Centres: fill vacant posts, provide essential equipment, adequate supply of medicines and consumables, and improve cold chain for vaccine storage and other biological materials.

- Establish a State Livestock Health Calendar: systematic, calendar-driven vaccination campaigns for FMD, Brucellosis, HS, BQ, etc. and deworming schedules.
- Design simple mobile-enabled disease reporting systems that help detect outbreaks early and trigger a coordinated response.
- Develop Regional Veterinary Diagnostic Laboratories at two or three carefully chosen locations capable of disease surveillance, milk quality testing, and monitoring of antimicrobial resistance.
- Increase collaboration between Dept. of AH&VS (GoN) and Milk Union operations: Milk Unions to hire Veterinary Field Assistants (VFAs) who will be connected to the dairy farms enrolled, making vaccination, AI, and extension totally integrated services.
- Leverage digital tools, telemedicine platforms, WhatsApp-based advisory, mobile apps to complement field services and disseminate veterinary advisories at scale.

4.3 Implementing Agencies

Department of AH&VS (GoN), ICAR-NRCM, DIMUL/MILKCON/ KVKs, DAHD (MAITRI program).

4.4 Targets (by 2035)

- 500 Gopal Mitras trained and deployed across dairy districts.
- 10 Mobile Veterinary Units operational.
- FMD vaccination coverage above 80 % in dairy clusters.
- 2 Regional Diagnostic Laboratories operational.
- Annual budget allocation of AH&VS doubled.

Pillar 5: Diversification of Dairy Animal Species

5.1 Rationale

Nagaland possesses diverse livestock genetic resources including native cattle, buffaloes, Mithun (*Bos frontalis*), and goats. Given the diversity of production environments across the state, dairy development strategies

may benefit from the complementary roles of different livestock species Crossbred cattle and graded-up buffaloes are suitable for peri-urban, plains and relatively accessible areas, where feed resources, veterinary services, and market linkages are more readily available. Mithun, in particular, produce high-quality milk with unique nutritional properties, albeit in limited quantities. Goats are suitable for smallholder systems, particularly in hilly and resource-constrained areas. Mithun and goat require relatively lower input, adapt well to local conditions, and can provide both milk and meat, contributing to household nutrition and income. A multi-species dairy method can be aligned with local environments, increase the income sources for households, and can lead to unique niche market opportunities such as Mithun milk, which is of exceptionally high nutritional quality.

5.2 Key Interventions

- In order to carry out selective improvement of Thu-tho cattle in hilly areas, promote the breed by highlighting its great adaptability, disease resistance, and cultural importance attributes. Scale up the ongoing conservation and genetic improvement efforts under the Rashtriya Gokul Mission.
- Promote crossbred cattle and graded buffalo in peri-urban and plains areas for commercial milk production, and establish LPCs for the supply of quality animals. Implementation can be supported through linkages with national-level networks such as the NDDB and NPDD to source high-genetic-merit stock, with long-distance transportation managed through certified systems ensuring health checks, quarantine, and insurance, while LPCs serve as local hubs for acclimatisation, distribution and farmer training.
- Mithun (*Bos frontalis*) Dairy Development: Conduct research on Mithun milk composition, functional characteristics, and processing potential at ICAR-NRCM. Design and execute commercial Mithun milking cooperatives in tribal districts. Develop Mithun Eco-Parks that would effectively integrate dairy production, agri-tourism, and marketing of premium products.

- Goat Dairy Development: Encourage production of highly productive dairy-type goat breeds under the systems of limited resources in smallholder contexts. Also support the development and marketing of value-added goat milk products such as cheese and fermented drinks for the niche market.
- Establish appropriate procurement and pricing mechanisms for Mithun milk, in consultation with Milk Unions and producer groups, thus incentivizing farmers to take up milking of Mithun under semi-intensive systems.
- Provide extension services specifically tailored to the differing needs of the four species cattle, buffalo, Mithun and goats which differ greatly in feeding, breeding, health and housing aspects.
- Encourage Integrated Multi-Species Farming Systems as a means of enhancing the efficiency of the use of resources, reducing risks, and increasing the overall income.

5.3 Implementing Agencies

ICAR-NRCM (Mithun), Department of AH&VS (GoN), NLDB, KVKs, DAHD (Rashtriya Gokul Mission).

5.4 Targets (by 2035)

- 2 Mithun Eco-Parks established and operational.
- Mithun milk price fixed and procurement initiated through DIMUL.
- Goat milk cooperative established in at least 3 districts.

Pillar 6: Access to Institutional Credit and Financial Support

6.1 Rationale

One of the main causes preventing farmers in Nagaland, particularly women, small, and young farmers, to invest in better quality animals, animal housing, feeding, and the equipment for processing is their lack of access to credit that is both timely and affordable. Non-existence of tangible collateral which is recognized by the banks, complicated banking procedures, and

limited outreach of banks in remote areas also lead to a further limitation of credit availability. Estimates are derived from benchmarking costs against similar dairy infrastructure projects implemented in other northeastern states under NPDD & AHIDF and NABARD's focus paper for the state of Nagaland. These constraints, together with low levels of productivity, have limited the pace of growth and investment in the dairy sector over time.

6.2 Key Interventions

- Establish district level dairy finance facilitation cells to assist farmers, dairy cooperatives, Farmer Producer Organizations (FPOs), and entrepreneurs in accessing available credit and support schemes. Develop bilingual outreach materials (English and Nagamese/local languages) explaining eligibility criteria, application procedures, and benefits under relevant programmes.
- Strengthen access to financial assistance through NABARD by facilitating credit for dairy infrastructure and capital requirements. Promote awareness of NABARD-supported dairy entrepreneurship and capacity-building programmes.
- NPDD (National Program for Dairy Development): Initiate arrangements for including Nagaland into NPDD Component A for milk testing and chilling infrastructure; also apply for grants to strengthen Milk Unions.
- AHIDF/Infrastructure Development Fund (IDF): Support dairy processors, FPOs, cooperatives, and entrepreneurs to get financing under the Animal Husbandry Infrastructure Development Fund (AHIDF) for dairy processing, cold chain infrastructure, value-added products, and modernisation of existing facilities.
- Introduce Cooperative Models Linking Loans with Milk Procurement: Disbursal of credit via cooperative institutions where repayment is ensured through milk procurement deductions will help in mitigating the risk of defaults and also in enhancing the confidence of the creditors.

- Collateral-Free Loans and Interest Subvention: Advocate for interest subvention at the state level on dairy loans which are in line with central schemes; also, support the promotion of group-based lending through SHGs and FPOs.
- CSR Fund Mobilisation: Mobilise additional resources through Corporate Social Responsibility (CSR) initiatives to support dairy infrastructure, capacity building, and equipment in the districts that are least served.
- Ensure adequate State Budget Allocation: Ensure state budget provisions for matching funds under centrally sponsored schemes; NER states usually benefit from a 90:10 funding ratio and should therefore make use of the available central allocations.

6.3 Implementing Agencies

Department of AH&VS (GoN), NABARD, Nationalized Banks/Regional Rural Banks, DAHD (NPDD, AHIDF), MUDRA, Private Banks, CSR departments of private companies.

6.4 Targets (by 2035)

- INR 200 crore in dairy credit disbursed to smallholders (cumulative).
- All NPDD-eligible projects in Nagaland fully utilised.
- 1000 Medium scale dairy farmers accessing formal dairy credit.

Pillar 7: Milk Procurement and Strengthening Cooperatives

7.1 Rationale

In Nagaland, only a few areas have formal milk procurement systems which are still quite weak and informal. The volume of milk procured by Milk Unions such as DIMUL, and MILKCON are significantly below their capacities. One major reason that farmers do not prefer the formal channels is the price difference between the Milk Union procurement prices and local informal market prices. Unless cooperative and procurement system is strengthened, the initiatives on genetic improvement, feeding, and health investments may not bring economic benefits to the farmers.

7.2 Key Interventions

- Introduce Minimum Support Price (MSP) for Milk: Appropriate price support and stabilisation measures at the farm-gate level, even if done on a limited and local basis, will reduce price fluctuations and make farmers more willing to sell through formal procurement channels. This requires assured state-level funding provisions (procurement subsidy or cooperative deficit financing) for sustainability.
- Implement Quality-Based Pricing: Strengthen and standardize the existing quality-based milk pricing system by incorporating additional quality parameters (such as microbial quality, adulteration-free milk, hygienic milk handling and incentive based quality premiums) across all Milk Unions.
- Strengthen Primary Dairy Cooperative Societies (DCS): Good governance, financial management, and member relations are at the core of a successful DCS. Use of digital tools for milk collection, quality testing, and payment tracking are suggested. Enable direct bank transfer to farmers ensuring prompt payment.
- Increase the Cooperative Network: Milk procurement areas with potential for production but presently with no organised procurement should be earmarked for new DCS establishment. Focus on districts outside the DIMUL milk shed.
- Encourage Women-Led Cooperatives: Since women play a major role in the management of livestock, offer training, institutional support, and credit access facilities for women-led dairy cooperative enterprises.
- Organise Cattle Melas and Dairy Promotion Events: Cattle exhibitions and dairy promotion events at the district level aimed at promoting farmers' enthusiasm, displaying top yield animals, and raising community awareness.
- Include Milk and Milk Products in Mid-Day Meal Schemes: School milk programmes to be introduced simultaneously for creating assured demand for locally produced milk and combating child malnutrition in the state.

7.3 Implementing Agencies

Department of AH&VS (GoN), NLDB, DIMUL/MILKCON, NABARD, Department of School Education (GoN), Village Councils, Women SHGs.

7.4 Targets (by 2035)

- MSP for milk notified and operational.
- Formal milk procurement doubled from current baseline.
- 300 new Primary DCS established.
- Inclusion of milk/dairy products in Mid-Day Meal scheme for primary school children in all districts.

Pillar 8: Post-Farm Gate Infrastructure and Processing

8.1 Rationale

Even in the areas where milk is produced, lack of cold chain, processing, and value addition infrastructure results in high post-harvest losses, degraded product quality, and inability to compete with branded dairy imports. Partly because of deficient milk supply and partly because of infrastructure deficiencies, DIMUL plant and other cooperative facilities are working below their capacity. Constructing strong post-farm gate infrastructure is the key to mitigating losses, allowing value addition, and making the dairy sector viable economically from end to end.

8.2 Key Interventions

- Cold Chain Setup: Install Bulk Milk Coolers (BMCs) in the cluster collection centres; as far as the off-grid areas are concerned, also ensure that the solar-powered BMCs are prioritised through NPDD Component A grants; milk chilling centres should be set up at district hub locations that are strategic; enhance cold chain connectivity through refrigerated vehicles.
- Utilization of Existing Plant Capacities: Supply of surplus milk to DIMUL from Assam and other neighbouring states is a potential interim measure to improve utilization of existing processing infrastructure,

while local milk production and procurement systems are being expanded.

- Introducing more Value-Added Products: Set up processing lines for paneer, cheese, dahi, butter, ghee, UHT milk, and flavoured milk; help in commercialization of traditional fermented dairy products.
- Rural Processing Units & Milk Parlours: Promote the setting up of small-scale, rural processing units and milk parlours in areas without Milk Union access, which will allow local value addition by entrepreneurs and cooperatives.
- Organic and Premium Branding: Register and promote a new brand identity e.g., "Nagaland Natural Dairy" or "Naga Mountain Milk" for the state dairy products that are positioned as organic, grass-fed, mountain-produced, and ethnically unique for premium markets.
- Natural Dairy Farming: Introduce the concept of natural dairy farming in need-based areas, promoting low-input, nature-aligned production practices aligned with consumer demand for chemical-free dairy products.
- FSSAI Compliance and Quality Assurance: Establish centralised and regional quality control laboratories for microbial, chemical, and residue testing; enforce Good Manufacturing Practices (GMP) and Good Hygienic Practices (GHP) standards in all processing units; train food safety officers in Nagaland.
- Energy Efficiency and Renewable Energy: Promote solar panels for chilling and water heating at dairy farms and processing units; biogas from cattle dung for on-farm energy needs; access AHIDF support for renewable energy systems.
- Mithun Eco-Parks: Set up Mithun Eco-Parks in suitable locations through a combination of Mithun milking, Mithun milk product processing (specialty cheese, health beverages), cultural tourism, and direct marketing to premium consumers.
- Standardised Pricing and Distribution: Follow reasonable retail prices and transparent dealer commissions for milk products that are based on benchmarks from other North-East Indian states' cooperative systems.

- Consumer Awareness: Advertise and undertake promotional campaigns to make the public aware of milk and dairy products through mass media, stressing health benefits, nutritional value, and safe consumption practices.
- Attractive Packaging and Traceability: Launch new milk products with attractive and up-to-date packaging as well as digital traceability systems to increase consumer trust and attraction.
- Cold Chain Integrity: Guarantee the maintenance of refrigeration conditions through the use of refrigerated delivery vans, solar-powered retail outlets, and backup electricity systems so that the product quality is not compromised during distribution.
- Milk Corridor Development: Formulate a milk corridor linking existing milk surplus areas with target demand centres, thereby enabling an efficient network for milk collection and marketing.

8.3 Implementing Agencies

Department of AH&VS (GoN), DIMUL/MILKCON, NLDB, ICAR-NRCM, DAHD (NPDD, AHIDF), FSSAI, Private Sector.

8.4 Targets (by 2035)

- 300 BMCs installed across dairy clusters.
- DIMUL milk processing capacity doubled and utilization above 80 %.
- 5 value-added product lines commercially operational.
- "Nagaland Natural Dairy" brand registered and marketed in urban centres.

Pillar 9: Human Resource Development and Capacity Building

9.1 Rationale

Investing in infrastructure alone is not sufficient to transform the dairy sector of Nagaland. Besides, a highly skilled and motivated team of personnel covering the entire spectrum of dairy development including veterinary professionals, para-veterinary staff, dairy technologists, cooperative managers, quality control officers, marketing personnel, and farm-level

extension workers is a crucial foundation for the growth of the dairy sector in a sustainable manner. At present, Nagaland is facing a shortage of trained personnel at all levels of dairy value chain, a situation that is further aggravated by the very few specialised dairy educational institutions in the state. While the vacancies in the government veterinary and animal husbandry departments remain to be filled, private and cooperative sector units are finding it difficult to hire technically qualified personnel. Closing these human resource gaps through focused recruitment, training and institutional development is the only way to make policy commitments real.

9.2 Key Interventions

- Procurement and Field Services Staffing: In recruitment, preference to veterinary doctors, para-veterinary staff, and field-level Dairy Extension Workers and Agriculture Staff need to be given so that the existing vacancies are filled and expanded service delivery needs in dairy clusters are fulfilled.
- Processing and Infrastructure Staffing: Recruit skilled and semi-skilled manpower for Collection Centres, Chilling Centres, Dairy Processing Plants, Milk Parlours, and Distribution Networks, covering functions including milk collection, quality control, processing technology, marketing, and logistics.
- Technical Support and Institutional Linkages: Fill technical capacity gaps through consultancy, and collaborative research by using expertise of ICAR institutes (ICAR-NRCM, ICAR-CIRC, ICAR-NAARM), the College of Veterinary Sciences and Animal Husbandry (Central Agricultural University (CAU), Jalukie, Peren), School of Agricultural Sciences, Nagaland University, and other organizations.
- Curriculum Development and Formal Education: Collaborate with state and central education authorities for setting up fresh syllabi and launching degree courses, PG diploma programmes, and certificate courses in dairy technology, dairy business management, and cooperative administration to meet the requirements of the dairy industry in the state.

- Training Programmes: Formulate and implement general and specialised training programmes for dairy farmers, members of cooperatives, entrepreneurs, processing unit staff, and government extension personnel. These trainings will include dairy farming practices, milk processing, quality assurance, and market development.
- Exposure Visits and Knowledge Exchange: Conduct exposure visits to model dairy farms, cooperative federations, processing plants, and research institutions within India for awareness creation, motivation building, technical knowledge up-gradation, and facilitation of best practice adoption among farmers and dairy sector employees.
- Women's Capacity Building: Provide training and capacity building to women to ensure gender mainstreaming in the sector.

9.3 Implementing Agencies

Department of AH&VS (GoN), DIMUL/MILKCON, NLDB, DAHD, ICAR-NRCM, ICAR-NAARM, College of Veterinary Sciences and Animal Husbandry (CAU, Jalukie), KVKs, Private Sector.

9.4 Targets by 2035

- At least 50 % of sanctioned vacancies in the dairy value chain filled by 2030.
- 100 % of existing dairy sector employees covered by at least one skill enhancement training or refresher program.
- At least one accredited dairy education or training institution (degree, diploma, or certificate level) operational in Nagaland.
- A minimum of 5,000 dairy farmers, cooperative members, and entrepreneurs trained through structured programmes over the period of ten years.

4. Cross-Cutting Issues and Enabling Conditions

4.1 Nutrition Awareness and Consumer Demand Creation

Increasing the consumption of milk isn't just about producing more milk, it is also about creating demand, particularly in areas where drinking milk is not part of the food culture. Brainstorming session revealed that lack of access and knowledge on the nutritional content of milk is one of the main reasons for low milk consumption among rural and tribal population of the state. Leveraging radio, local TV, and social media in local languages, nutrition communication campaigns, centered around the health benefits of milk for children, women, and the elderly, can have a great impact.

School milk programmes implemented through existing Mid-Day Meal schemes can contribute to improving access to nutritious foods for children while creating a stable source of demand for locally produced milk. Such programmes may also provide market opportunities for dairy cooperatives and producer organizations and help promote regular milk consumption among school children. Accordingly, pilot school milk programmes may be introduced in selected dairy cluster districts and expanded progressively based on operational experience, local procurement capacity, program outcomes, and resource availability. Although research on lactose intolerance among tribal communities in Nagaland is hardly documented, it should be on top of the list as it can help product development (e.g. lactose-reduced milk, fermented dairy) and communication. In fact, lactose intolerance affects many Indian populations (around 60-70 %) with large regional and ethnic variation (Tandon et al. 1981). Hence, it is necessary to perform community-specific assessments (Swallow, 2003; National Institute of Nutrition, 2011) of lactose intolerance among different tribes of Nagaland.

4.2 Digital Technology and Data Systems

Digitization could positively impact the dairy sector in Nagaland. Besides that, technology-aided platforms for milk procurement and payment, teleconsultation with veterinarians through telemedicine, tagging animals via RFID or QR code, and digital market for farmers and buyers could be adopted. Besides, two key schemes - the national Traceability Platform for Livestock Products (launched in October 2024) and the National Milk Recording Program (launched in September 2024) - offer powerful blueprints that Nagaland should consider implementing.

Developing a state-level dairy data management system that integrates livestock census data, milk production records, cooperative procurement, AI records, and disease surveillance will provide the necessary support for evidence-based policy monitoring and adaptive management of the Roadmap.

4.3 Renewable Energy Integration

Dairy farming requires a lot of energy, mainly for cooling the milk, pasteurization or UHT treatment of milk, and lighting the farm. In some remote places, electric grid is either unreliable or simply does not exist. Using Solar-powered Bulk Milk Coolers, solar water heaters for milk processing, and biogas plants powered by cattle dung are not only practical but at the same time they significantly improve the environment and lower the operational cost. NPDD Component A notably promotes the use of solar-powered BMCs. The Biogas Subsidy Scheme (80 % subsidy + 20 % farmer contribution) should be widely advertised and connected with dairy enterprises. Demonstration units at KVKs should exhibit integrated renewable energy dairy systems.

4.4 Climate Resilience

Nagaland is currently experiencing the effects of climate change in ways such as altered rainfall patterns, more frequent extreme weather events,

seasonal fluctuations in fodder availability, and increased pressure from diseases. Therefore, dairy practices should be climate resilient, for example, choosing drought-tolerant fodder varieties, saving water at farms, making animal shelters comfortable during heat and cold stress, and developing early warning systems for disease outbreaks that are triggered by climate variations. Along with dairy cluster planning, environmental sustainability particularly greenhouse gas control, waste management (dung for biogas and organic manure), and ecosystem conservation should also be considered.

4.5 Gender Inclusion and Women Empowerment

Women hold a major responsibility for livestock management in Naga households, including feeding, milking, health care, and milk marketing. Nevertheless, they are usually left out of formal cooperative membership, credit access, and decision-making. There are no disaggregated data about women's involvement in dairy activities. The Roadmap pledges gender equity and mainstreaming: training programmes and cooperative memberships for at least 50 % of women; creation of women-led cooperatives in each dairy cluster; and linking women dairy entrepreneurs with MUDRA loans, SHG networks, and mentorship programmes.

4.6 Private Sector Engagement and CSR

The scale of investment required for dairy sector transformation in Nagaland estimated at INR 600 crores over the Roadmap period cannot be met by government alone. Private sector participation via PPP, FDI facilitation, and Corporate Social Responsibility (CSR) funding is necessary. Agro-processing companies, dairy equipment manufacturers, energy companies (solar), and pharmaceutical companies (veterinary medicines) are potential CSR partners. Agri-entrepreneurs and start-ups in dairy processing, cold chain logistics, and digital agri-services should be promoted through incubation support and improvements in the ease-of-doing-business.

4.7 Research and Innovation Priorities

The brainstorming session highlighted a number of critical research gaps that need immediate attention:

- Milk composition, functional properties, and processing potential of Mithun which will support the development of niche products.
- Development and commercialization of innovative, regionally distinctive functional dairy products incorporating Mithun milk and other local ingredients, with robust traceability systems.
- Lactose intolerance prevalence in Nagaland's tribal communities with implications for product formulation and nutrition communication.
- Genetic characterization and performance recording of Thu-tho cattle.
- Feed resource mapping across agro-climatic zones to establish biomass availability for fodder and feed production.
- Socio-economic analysis of dairy farming system viability to provide guidance on credit, insurance, and other support measures.
- Climate impact modelling on Nagaland's livestock sector as a basis for adaptation planning.

Being a premier livestock research institution in the state, ICAR-NRCM may spearhead a unified research program on these issues in collaboration with ICAR-CIRC, ICAR-NAARM, SASRD, Medziphema, and the College of Veterinary Sciences and Animal Husbandry (CAU, Jalukie, Peren).

5. Implementation Framework and Phased Plan

5.1 Phased Implementation

The Roadmap is planned with three phases of implementation that correspond to the building of institutional capacity, development of infrastructure, and change of behaviour, each having its own realistic timelines:

Phase	Period	Focus
Phase 1: Foundation	2026–2028	Policy formulation, institutional framework, pilot cluster establishment, training roll-out, cooperatives revival
Phase 2: Consolidation	2028–2031	Infrastructure scaling, technology adoption, market linkage, central scheme convergence
Phase 3: Scaling	2031–2035	Full cluster expansion, commercial processing, branding, self-sufficiency target

5.2 Phase 1: Foundation (2026–2028)

Year 1 Priority Actions (2026-27)

- Notify the State Dairy Cattle Breeding Policy.
- Set up the State Dairy Development Mission as the highest level coordinating body with the Agriculture Production Commissioner as its chairman.
- Initiate the 21st Livestock Census data analysis for Nagaland to establish current baselines.
- Identify and demarcate at least 10 pilot dairy clusters (8 plains/peri-urban, 2 hill zones).
- Survey the cooperative societies that are in operation; earmark cooperatives that have been inactive for revival and those which are functioning efficiently for strengthening.
- Launch a large-scale Gopal Mitra training program (first batch of 100 trainees).

- Initiate Fodder Resource Assessment across all districts.
- Prepare and disseminate a multilingual brochure on all central dairy schemes available for Nagaland farmers.
- File applications with NPDD and AHIDF for BMC and chilling infrastructure at cluster-level.
- Launch Mithun milk research project at ICAR-NRCM.

5.3 Phase 2: Consolidation (2028–2031)

During Phase 2, pilot cluster learnings are systematically documented and used to refine approaches before scale-up. Major activities include:

- Expand dairy clusters from 10 pilot sites to 50 full clusters across 10 districts.
- Complete cold chain infrastructure (300 BMCs, 5 milk chilling centres) through NPDD and AHIDF funding.
- Scale AI coverage to 30 % of eligible dairy animals.
- Launch school milk programmes in 3 districts; target 50,000 primary school children.
- Establish Regional Animal Disease Diagnostic Laboratories in Kohima and Mokokchung.
- Commission the first Mithun Eco-Park.
- Launch the "Nagaland Natural Dairy" branding initiative; enter e-commerce platforms.
- Increase formal milk procurement to 50 per cent above baseline.

5.4 Phase 3: Scaling (2031–2035)

Phase 3 focuses on establishing the commercial maturity of the Nagaland dairy sector:

- Milk production to reach 100,000 tonnes per annum (Doubling 2024 baseline milk production of 51,680 tonnes).
- Per capita milk availability to reach 100-120 grams per person per day (from current 65 g).
- DIMUL and other Milk Union plants operating at more than 80 % capacity utilization.

- Five value-added product lines commercially operational.
- Livestock sector contribution to GSDP restored towards 4–5 %.
- State largely self-sufficient in liquid milk supply for the Dimapur urban market.
- Establishment of state-of-the-art quality control laboratories accredited to ISO/NABL standards.

5.5 Institutional Mechanism for Implementation

To implement successfully, an exclusive institutional mechanism with clear mandates and accountability is essential:

Institution / Body	Role & Responsibility
State Dairy Development Mission (proposed)	Apex body: inter-departmental coordination, policy decisions, budget allocation, progress monitoring
Department of AH&VS, GoN	State nodal department: scheme implementation, cooperative oversight, veterinary services
NLDB (Nagaland Livestock Development Board)	Breed improvement, livestock procurement, AI services
DIMUL/MILKCON	Milk procurement, processing, marketing, cooperative federation leadership
ICAR-NRCM, Medziphema	Research, technology development, farmer training, Mithun dairy promotion
ICAR-CIRC, Meerut	Cattle breeding program support, AI technology, genetic resources
KVKs (Phek, Kohima, Mokokchung, etc.)	Farmer training, technology transfer, demonstration, on-farm trials
ICAR-NAARM, Hyderabad	Coordinating capacity building programmes, human resource management, technical collaboration with ICAR/SAU institutes
NABARD, Nagaland Regional Office	Credit facilitation, FPO/cooperative finance, dairy infrastructure lending
FSSAI Regional Office	Food safety compliance, quality standards, laboratory certification
Village Councils	Community mobilisation, land allocation for fodder plots, cooperative governance
FPOs and SHGs	Collective marketing, credit linkage, women enterprise development

6. Financial Framework and Resource Mobilisation

6.1 Investment Requirements

Dairy sector revitalization in Nagaland to meet the targets set by the Roadmap requires high-level investments that have to be maintained throughout the 2026–2035 period. The total investment requirement is estimated to be around INR 600 crores over the ten-year period with potential sources including central government schemes, state budget allocations, institutional credit, and private sector. The estimated investment requirement represents the aggregate cost of implementing the interventions proposed under the nine strategic pillars of the Nagaland Dairy Roadmap 2026–2035. The largest share of investment is allocated to improving veterinary and health services (₹150 crore), followed by breed improvement and artificial insemination (AI) infrastructure (₹100 crore) milk procurement (₹ 85 crores), milk processing (₹ 70 crores) feed and fodder development (₹ 60 crores), capacity building, research and miscellaneous activities (₹ 135 crores). Additional investments are proposed across the remaining intervention areas, as detailed in the table below. These estimates are indicative only and intended to provide an initial assessment of the scale of investment required for sector development. The figures will need to be refined through detailed project planning, technical appraisal, and financial modelling during subsequent phases of implementation. The estimates have been derived using cost benchmarks from comparable dairy infrastructure projects implemented under the National Program for Dairy Development (NPDD) and the Animal Husbandry Infrastructure Development Fund (AHIDF) in North-Eastern states, together with relevant projections and assessments contained in NABARD's focus papers for Nagaland.

Intervention	Item	Qty	Price (RS)	Total Cost (RS)
Milk Procurement	Primary Dairy Cooperative Society (Approx. 300 villages)	300	20 Lacs	60 crores
	50 Vehicles for Dairy clusters (Approx. 6 DCS/Cluster)	50	15 Lacs	7.5 crores
	Bulk Milk Coolers (One/DCS)	300	5 Lacs	15 crores
	Milk Analyzers (Lactoscan)	300	50,000	1.5 crore
	Electronic weighing balance/ Milk Cans	300		1 crore
	Total			**85 crores**
Milk Processing	Dairy Processing Plants (10000 L capacity)	2	20 crores	40 crores
	Milk Chilling Centres/ Mini Plants	5	5 crores	25 crores
	Vehicles/Miscellaneous			5 crores
	Total			**70 crores**
Feed and Fodder Development	Fodder establishment in 300 villages	300	5 Lacs	15 crores
	Equipment distribution to farmers (Choppers, etc.)			15 crores
	Feed Mill (Cattle feed)	5	6 crores	30 crores
	Total			**60 crores**
Veterinary Services and Health Infrastructure	Double the AH& VS Dept.'s annual budget	10	12.5 Lacs	125 crores
	Health camps/vaccination, etc.			25 crores
	Total			**150 crores**
Breeding and AI Infrastructure	Livestock Procurement Centre (Rs.25000 subsidy/Crossbred cow for farmers)	20000	25000	50 crores
	Strengthening Bull Mother Farm, Frozen Semen Production			30 crores
	Cold Chain and AI Infrastructure			20 crores
	Total			**100 crores**

Intervention	Item	Qty	Price (RS)	Total Cost (RS)
Training, Research, Capacity Building, Others	Dairy Training Institute			50 crores
	Training and Capacity Building			25 crores
	Research			20 crores
	Mithun Eco Park			20 crores
	Digital systems and Data Management			10 crores
	Miscellaneous			10 crores
	Total			**135 crores**
	Total			**600 crores**

Note: These are only tentative estimates which need a thorough project-level financial modelling.

6.2 Central Scheme Convergence

Cost-sharing ratios under most centrally sponsored schemes for North-East Region (NER) are very favourable to Nagaland, for example 90 % central and 10 % state share. This makes it imperative that the state government proactively submits well-prepared project proposals and ensures timely release of its matching share to avoid stalling central fund releases. Key central schemes to leverage include:

- National Program for Dairy Development (NPDD): Component A for milk testing, chilling, and BMC infrastructure. Total national outlay INR 1,790 crore (2021-22 to 2025-26), extended to 2027-28.
- Animal Husbandry Infrastructure Development Fund (AHIDF)/ Infrastructure Development Fund (IDF): INR 15,000+ crore corpus for processing, cold chain, value addition, and renewable energy infrastructure.
- National Livestock Mission (NLM): to implement programs for feed and fodder production, breed enhancement, and development of animal husbandry business.
- Rashtriya Gokul Mission (RGM): for the conservation of native breeding stock and enhancing the genetics of the breed including Thu-tho cattle.

- Supporting Dairy Cooperatives and Farmer Producer Organizations (SDCFPO): 2 % interest subvention on working capital for dairy cooperatives.
- NABARD dairy refinancing and NABARD Farmer Producer Organization support.
- PM MUDRA Yojana: up to INR 10 lakh credit for small dairy enterprises without collateral.

7. Monitoring, Evaluation, and Adaptive Management

7.1 Monitoring Framework

Effective monitoring is essential for ensuring that the proposed Roadmap is implemented as planned, resources are utilised efficiently, and interventions are reviewed and adjusted based on progress and emerging requirements. Following is the recommended three-tier monitoring mechanism:

- VILLAGE/CLUSTER LEVEL: Gopal Mitras and cooperative managers will collect monthly milk production figures, Artificial Insemination (AI) coverage, vaccination records, cooperative payment registers, and farmer income data.
- DISTRICT LEVEL: District Animal Husbandry Officer will chair quarterly review meetings; key performance indicators will be tracked at the district level through dashboards.
- STATE LEVEL: State Dairy Development Mission will conduct a timely annual Dairy Sector Review; independent third-party evaluation will be done at mid-term (2030) and end-term (2035).

7.2 Key Performance Indicators (KPIs)

The following KPIs are derived from the pillar-level targets, baseline data from BAHS 2024 and the 20th Livestock Census 2019, and benchmarks established during the brainstorming session. These will be tracked annually and reviewed at each phase transition.

Parameter	Baseline (2024-2026)	Target (2026-2036)	Means of achievement
Total Milk Production	51,680 MT	100000 MT-120000 MT	Increase the state's crossbred cattle population by an additional 70,000–80,000 animals, raising the total crossbred population to approximately 85,000–100,000 head. Assuming that two-thirds of the crossbred cows (approximately 55,000–60,000 animals) are in milk at any given time and achieve an average productivity of 5–6 kg of milk per cow per day, the state could produce an additional 275–330 metric tonnes (MT) of milk per day. This would translate into an estimated annual milk production of 100,000–120,000 MT.
Per Capita Milk Availability	65g/day	100-120g/day	Doubling the annual milk production from the current 50000 MT to 100,000-120,000 will improve the per capita availability from 65g/day to 100-120g/day.
No. of crossbred Cows	17000+	80000+	The proposed Livestock Procurement Centre shall procure high-quality crossbred dairy cows from outside the state for distribution to farmers in the hilly, and rural areas, with a subsidy of ₹25,000 per cow. Over a period of 5–6 years, 20,000 crossbred cows shall be distributed to approximately 10,000 farmers (maximum of two cows per farmer) through the state's 300 Dairy Cooperative Societies (DCSs). Simultaneously, the establishment of 1,000 medium-scale dairy farms in the plains and peri-urban areas, with an average herd size of 20 crossbred cows, will add another 20,000 crossbred cows to the state's dairy sector. Together, the induction of these 40,000 crossbred cows, in addition to the existing 17,000 crossbred cattle, will increase the state's crossbred cattle population to approximately 57,000 during the initial 5–6 years. With continued breeding, replacement, and herd expansion (population growth @5-6% per annum), the total crossbred cattle population in the state is projected to reach approximately 80,000 within 10–12 years.

Parameter	Baseline (2024-2026)	Target (2026-2036)	Means of achievement
No. of Dairy Clusters	Nil	50	Each proposed dairy cluster may have 5-8 DCS.
No. of medium scale dairy farms (10-30 cows)	50+	1000+	Establish more than 1,000 medium-scale dairy farms, primarily targeting progressive farmers in the plains and peri-urban areas of the state. Each dairy unit shall have access to institutional credit of approximately ₹20 lakh, generating a cumulative credit flow of around ₹200 crore to promote dairy entrepreneurship, facilitate the establishment of commercially viable dairy farms, and accelerate the growth of the state's organized dairy sector.
Number of Functional DCS	100+	300+	Currently, there are 150+ DCS, of which more than one-third are not functional; The number of functional DCS is around 100. This can be increased to about 300 across 10 districts. Each DCS shall be invested with a primary milk procurement-cum-chilling centre at a cost of 20 lacs/centre to improve the milk procurement infrastructure and strengthen the cooperative sector in the state.
Number of dairy farmers with active milk pouring	2200+	11000+	Currently, the state has over 150 Dairy Cooperative Societies (DCSs), of which more than one-third are non-functional, leaving only about 100 functional DCSs. The network should be expanded and revitalized to establish approximately 300 functional DCSs across all 10 districts of the state. Each DCS, including the existing societies, shall be equipped with a Primary Milk Procurement-cum-Chilling Centre at an estimated cost of ₹20 lakh per centre to strengthen milk collection infrastructure, improve milk quality, and enhance the efficiency and sustainability of the cooperative dairy sector.

Parameter	Baseline (2024-2026)	Target (2026-2036)	Means of achievement
Formal Milk Procurement (LTPD)	10000+ LTPD	100000+ LTPD	At least one-third of the state's projected daily milk production (approximately 275,000–330,000 kg/day) should be procured through the formal cooperative milk procurement system.
Number of BMCs Installed	15+	300+	Transportation of procured milk is a major challenge due to the state's hilly terrain and dispersed production clusters. To ensure timely chilling and maintain milk quality, one Bulk Milk Cooler (BMC) is proposed for installation at each selected village or Dairy Cooperative Society (DCS). An estimated ₹15 crore has been earmarked for this intervention.
No of Dairy Processing Plants	3	5	Dairy Processing infrastructure shall be extended to two additional districts.
No. of Milk Chilling Plants	1	5	
AI Coverage (% of breedable females)	<10%	40%	At least 500 Gopal Mitras are trained to support the projected increase of AI coverage to 40% breedable females.
Number of Gopal Mitras Deployed	Nil	500+	A State Dairy Training Institute shall be established to build a skilled dairy workforce by providing regular training and capacity-building programmes for Gopal Mitras, para veterinary personnel, community animal health workers, and progressive dairy farmers across the state.
Dairy Sector Employees Trained	Unknown	3000+	
Livestock Sector % of GSDP	2.19%	>4%	Overall improvement of dairy and livestock sector in the state

Parameter	Baseline (2024-2026)	Target (2026-2036)	Means of achievement
School Milk Programme Coverage	Nil	150000+ Primary School Students	Integrating milk into the Mid-Day Meal Scheme for primary school children would significantly improve child nutrition and create a stable institutional market for locally produced milk. Nagaland has approximately 400,000 school-going children, of whom 150,000–200,000 are enrolled in primary schools. Providing 200 ml of milk per child per school day would require an estimated annual budget of ₹80–100 crore.
Mithun Eco-Parks Operational	Nil	2	Funding through State/Central Government schemes/programs

7.3 Adaptive Management

Dairy production is a very complex and ever-changing activity. Operations in this sector are exposed to the impact of climate changes, market fluctuations, political changes, and the emergence of new technologies. Accordingly, the Roadmap incorporates an adaptive implementation approach that enable periodic review of progress and adjustment of interventions as required. This approach includes annual assessment of key performance indicators (KPIs), identification of areas where progress is below target, analysis of underlying constraints, and revision of implementation strategies and resource allocations based on available evidence and field experience. Such a process can help ensure that interventions remain relevant and responsive to emerging challenges and opportunities. The proposed State Dairy Development Mission may also publish a comprehensive dairy sector status report every two years, to provide an updated evidence base for planning, monitoring, and policy review.

8. Key Policy Recommendations to the Government of Nagaland

Based on the brainstorming outcomes, scientific evidence, and consultations with stakeholders, the Policy Working Group presents concrete recommendations for immediate and medium-term actions to be taken by the Government of Nagaland for:

Immediate Actions - within 12 months

- Establish a State Dairy Development Mission headed by the Agriculture Production Commissioner, with members from AH&VS, Agriculture, Finance, School Education, ICAR, NABARD and Milk Unions.
- Publish the State Dairy Cattle Breeding Policy identifying suitable cattle breeds for each specific zone in the state.
- Implement a Minimum Support Price (MSP) system for milk procurement to assure stable price and encourage farmers to supply milk to formal procurement channels of dairy cooperatives.
- Increase the annual Budget allocation for AH&VS to 3 % of the total state budget and create an exclusively dairy-related sub-head to fill the existing gaps in infrastructure, productivity and delivery of services in Nagaland's dairy sector. These additional resources shall be used to finance activities for breed improvement, fodder development, animal health, market systems, rural livelihood support, nutritional security enhancement and reducing reliance on imported milk.
- Prepare and submit project proposals under NPDD Component A and AHIDF for dairy infrastructure development in the Dimapur milk shed.
- Initiate Gopal Mitra Training Programmes with an aim to cover at least 100 trainees from various district dairy clusters.
- Include milk or dairy products in the Mid-Day Meal Scheme at government schools in the 3 pilot districts.
- Publish State Fodder Development Policy identifying agro-climate zones with fodder production potential in the state.

Medium-Term Actions (1–3 years)

- Constitute the State Livestock Breeding Policy Board a permanent statutory and advisory body to provide policy guidance and strategic advice on livestock breeding.
- Establish Livestock Procurement Centres (LPCs) for the supply of good quality dairy animals at strategic locations in the state.
- Set up Regional Veterinary Diagnostic Laboratories in Kohima and Mokokchung to strengthen disease surveillance and diagnostic services.
- Launch a Women-Led Dairy Cooperative Development Program with credit linkage and training.
- Fix a fair price for Mithun milk and initiate procurement through DIMUL in collaboration with ICAR-NRCM.
- Enhance the existing quality-based milk pricing system by introducing performance-linked incentives for superior milk quality including hygienic production practices, low bacterial count, and other quality parameters beyond fat and SNF.
- Develop and register the "Nagaland Natural Dairy" brand for premium product marketing at national level and actively promote organic and natural dairy products among entrepreneurs and consumers.
- Undertake feasibility studies for establishing two Mithun Eco-Parks in suitable tribal areas to promote eco tourism and conservation.
- Collaborate with ICAR-NRCM to initiate a formal research program on Mithun milk composition, processing, and market potential.
- Develop and disseminate outreach materials (in English & Nagamese) covering all central and state dairy development schemes, benefits, and application procedures through KVKs, Village Level Entrepreneurs (VLEs), and cooperative offices.

9. Conclusions

Nagaland's dairy sector is witnessing a drastic downturn of 36 % drop in milk production over a decade, milk availability per person reduced to 14 % of the national average, and the livestock sector's contribution to the state's gross domestic product (GDP) declining from 7.31 % to just 2.19 %. These challenges should not be viewed in isolation. Taken together, they reflect broader constraints affecting the livestock sector and have implications for milk production, nutritional security, rural livelihoods, and public investment in the sector.

Yet, a large portion of the dairy potential in the state remains untapped. Nagaland is endowed with exceptional natural and livestock resources - a rich agro-biodiversity, low-input traditional farming systems in harmony with organic principles, and an increasing aspirational demand for premium, ethnically authentic food products. These are real strengths which, if backed by the government, can bring the emergence of a vibrant and competitive dairy sector. This Policy Paper's Roadmap offers nine strategic pillars for interventions. This includes dairy cluster development, genetic improvement, feed availability, veterinary services, species diversification, financial inclusion, cooperative strengthening, post-farm infrastructure, and human resource development, touching upon the entire dairy value chain in a comprehensive manner. Cross-cutting, priorities such as climate resilience, gender equity, digital transformation, nutrition security, and evidence-based policy making, have been incorporated throughout the roadmap to ensure it remains comprehensive, resilient and responsive to the evolving development needs of Nagaland.

Critically, this Roadmap does not advocate for replication of successful dairy development models from the plains of India. The lessons of the White Revolution transformative as they were for Punjab, Gujarat, and Andhra Pradesh cannot be transferred as such to Nagaland’s mountains, tribal land systems, and socio-cultural context. Instead, this Roadmap proposes context-

specific adaptation: decentralized, cluster-based production systems; multi-species strategies; organic and niche market positioning; community-led cooperatives; indigenous breed conservation integrated with pragmatic genetic improvement; and a trained, empowered human resource base.

Implementation of this Roadmap will require strong political will, sustained and enhanced budgetary commitment, effective institutional coordination, and genuine engagement of farming communities especially women as decision-makers and beneficiaries. It will require ICAR-NRCM to anchor the research and technology transfer agenda, NABARD and banking institutions to expand financial inclusion, DIMUL and the cooperative network to be farmer-friendly and market-responsive, the KVK network to intensify its outreach, and ICAR-NAARM to coordinate the capacity building agenda across institutions.

The decade of 2026–2035 represents a critical window of opportunity. Nagaland's economy is projected to grow up to USD 10 billion by 2030. And taking into account the unprecedented historical funding opportunities provided by the Central Government schemes for NER states, it is time to take action. The Government of Nagaland, ICAR, and various stakeholders are encouraged to adopt it with the urgency and dedication it calls for the welfare of Nagaland's dairy farmers, rural households, and the overall nutrition of its people.

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Summary of Recommendations from Brainstorming Workshop

The following recommendations were formally recorded at the Brainstorming Session on Dairy Sector Development in Nagaland held on 02 February 2026 at KVK Phek, Porba, Nagaland:

1. Breeding Policy: Develop a sound breeding policy based on scientific principles; selective breeding and conservation of Thu-tho cattle; production of crossbred cattle for dairy development.
2. Large-Scale Dairy Farms: Help in the establishment of medium and large-scale dairy farms mainly around Dimapur where DIMUL operates and the land is suitable for fodder production.
3. Procurement Policy: Offer a minimum support price per litre to motivate farmers to supply milk to Milk Unions or cooperatives.
4. Capacity Building Programmes: Conduct large-scale training programmes for dairy farmers, cooperative members, entrepreneurs, and employees in the dairy industry.
5. Genetic Improvement: Work on genetically enhancing local cattle or bringing high yielding crossbred animals to Nagaland.
6. Innovative Marketing Strategies: Set up Mithun Eco-Parks for the marketing of Mithun milk products.
7. Enhancing Feed Availability: Promote fodder production and fodder tree plantation; develop exclusive fodder plots in each village through Village Councils.
8. Utilising Agri By-Products: Encourage paddy straw utilization as cattle fodder.
9. Veterinary Services to Remote Areas: Implement the Gopal Mitra model for vaccination, AI, and ear tagging in remote areas.
10. Advanced Reproductive Technologies: Utilise embryo transfer and related assisted reproductive technologies.

11. Diversification of Milk Species: Explore Mithun, buffalo and goat milk; Mithun provides low quantity but high-quality milk.
12. Livestock Procurement Centres: Help farmers with buying crossbred cattle and graded-up buffalo from other states.
13. Diversifying Feed Resources: Motivate the production of silage in the states.
14. Enhanced Budget for Livestock Sector: Raise state budget allocation for livestock promotion; ensure sufficient allocation matching state's share for central government schemes.
15. Renewable Energy Application: Use solar power for electrification of dairy farms and water heating.
16. Tapping Government Schemes: Develop and distribute leaflets on all government schemes (NLM, NABARD FPO program) to farmers for raising awareness.
17. Credit Access: Check out the possibilities of collateral-free, low-interest loans linked to cooperative society membership.
18. Branding of Milk: Label state milk as organic or naturally produced milk.
19. Innovative Value Addition: Promote cheese and UHT milk production.
20. Exclusive Milk Parlours: Install milk parlours where Milk Unions have no presence.
21. Mid-Day Meal Scheme: Provide milk and milk products as part of school Mid-Day Meal scheme to improve child nutrition.
22. Audiovisual Tools: Use audiovisual and social media to spread awareness about clean milk production.
23. Biogas Adoption: Launch a campaign for promoting biogas production (80% subsidy scheme) to use cattle dung and generate power.
24. CSR Fund Tapping: Draw on CSR funds of private companies for the development of the dairy sector.
25. Lactose Intolerance Research: Perform studies on the occurrence of lactose intolerance among the tribal population of Nagaland.
26. Veterinary Support via Milk Unions: Milk Unions to hire veterinary field assistants (VFAs) to offer veterinary service to registered farmers.

27. Cattle Melas/Dairy Promotion Events: Arrange for cattle shows accompanied by awards for genetically superior animals.
28. Extend Primary Cooperative Societies: Set up more primary Cooperative Societies to help enhance the procurement of milk.

Overview of Central Schemes for Dairy Development

Scheme	Key Features Relevant to Nagaland
NPDD Component A (2021-22 to 2027-28)	Creation/strengthening of quality milk testing, BMCs, and chilling infrastructure for cooperatives/FPOs. NER: 90% central, 10% state share. Also supports solar-powered BMCs.
NPDD Component B (Dairying Through Cooperatives)	JICA-funded; Milk Union infrastructure, cooperative strengthening, and market linkage.
AHIDF / IDF (2021-22 to 2025-26, extended)	INR 15,000+ crore; processing plants, cold chain, value addition, renewable energy for dairy cooperatives, FPOs, private entrepreneurs. 3% interest subvention.
National Livestock Mission (NLM)	Feed-fodder development, breed improvement, entrepreneurship in goat, sheep, and poultry; applicable for fodder plot development.
Rashtriya Gokul Mission (RGM)	Indigenous breed conservation; AI infrastructure; Gokul Gram development; relevant for Thu-tho cattle conservation.
SDCFPO (Supporting Dairy Cooperatives & FPOs)	2% p.a. interest subvention on working capital loans for dairy cooperatives and FPOs.
PM MUDRA Yojana	Up to INR 10 lakh collateral-free loan for small dairy enterprises under the Tarun category.
NABARD Dairy Schemes	Refinance for dairy infrastructure; Animal Husbandry Fund; FPO capital support; rural credit linkage for cooperatives.
Revitalising Promising Producers' Owned Institutions (NDDB)	Grant up to INR 3 crore + interest-free loan up to INR 5 crore for dairy cooperatives.

Source: DAHD, Government of India; NDDB; NABARD. Compiled by the Policy Working Group, 2026.

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