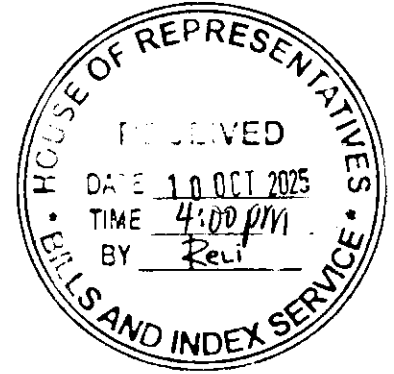




Republic of the Philippines
House of Representatives
Quezon City, Metro Manila



Twentieth Congress
First Regular Session

HOUSE BILL NO. **5459**

Introduced by Representative Ma. Rene Ann Lourdes G. Matibag

**AN ACT INSTITUTIONALIZING THE MALNUTRITION ABATEMENT AND
RESOURCE-BASED CARABAO-MILK OUTREACH FOR SCHOOL CHILDREN
(MARCOS) FEEDING PROGRAM**

EXPLANATORY NOTE

I. THE MALNUTRITION CRISIS IN THE PHILIPPINES

President Marcos Jr. in his 2025 SONA reaffirmed that the nationwide school feeding programs, including daily milk provision, have already served millions of Filipino children. He committed to expanding these efforts with increased funding and broader coverage, positioning milk feeding as a strategic solution for health, nutrition, and educational advancement.

It is a recognition that the Philippines faces a persistent and alarming child malnutrition crisis that demands urgent and comprehensive intervention. According to the World Bank (2023), stunting affects approximately 29% of Filipino children under age five, with the highest rates concentrated in rural regions, representing a crisis that has not improved in over 30 years. The country ranks among the top ten globally in the number of stunted children, and about 44.7% of the population faces moderate or severe food insecurity (Development Aid, 2023).

The situation is particularly dire given that malnutrition kills 95 Filipino children daily, according to UNICEF (2023) data cited by the Philippine Institute for Development Studies. Among school-aged children, the Department of Education reported that 13.2 percent were stunted or wasted out of 12.7 million assessed in 2019, representing a staggering number of Filipino children whose future potential is being compromised by inadequate nutrition (Department of Education, 2020).

The situation becomes even more dire when examining micronutrient deficiencies. The Food and Nutrition Research Institute (2019) found that micronutrient undernutrition is highly prevalent in the Philippines: 38% among infants six to 11 months old; 26% among children 12–23 months; and 20% of pregnant women are anemic. Additionally, nearly 17% of children aged 6–59 months suffered from vitamin A deficiency in 2018, indicating widespread nutritional gaps that affect children's immune systems, growth, and cognitive development (FNRI, 2019).

The impact of malnutrition extends beyond physical health outcomes. Research by the Asian Development Bank (2019) indicates a strong correlation between nutritional status and cognitive development, with malnourished children showing significantly lower cognitive performance compared to their well-nourished peers. This cognitive deficit perpetuates cycles of poverty and limits the nation's human capital development, as hungry children cannot concentrate effectively in school, leading to higher dropout rates and perpetuating intergenerational poverty (Save the Children Philippines, 2022).

The Global Hunger Index (2023) places the Philippines in the “serious” hunger category, emphasizing the urgent need for comprehensive nutrition interventions that go beyond existing limited programs.

II. SUPERIOR NUTRITIONAL BENEFITS OF CARABAO MILK

Carabao milk presents a scientifically proven, uniquely advantageous solution to address child malnutrition in the Philippines due to its superior nutritional profile compared to conventional cow's milk. Research documented by GMA News (2023) and validated by multiple studies shows that carabao milk contains 58% more calcium, 40% more protein, and 43% less cholesterol than cow's milk, making it particularly suitable for growing children who require optimal calcium intake for bone development and lower cholesterol for cardiovascular health.

The nutritional superiority extends beyond basic macronutrients. According to The Blissful Story Creamery (2023), carabao milk contains higher levels of vitamin A, vitamin D, riboflavin, and essential minerals including iron, potassium, magnesium, and phosphorus. The milk also contains approximately 10% less lactose than cow's milk, making it more suitable for children

with mild lactose sensitivities, and includes bioactive compounds and immunoglobulins that support immune function development.

The Philippine Carabao Center has extensively documented the nutritional superiority through comparative analyses. Research conducted by Barile et al. (2019) at the University of the Philippines Los Baños demonstrated that carabao milk contains 7-8% fat content, providing more nutritional energy than cow's milk while serving as an extremely rich source of calcium and essential minerals. The higher fat content provides essential fatty acids crucial for brain development, while the comprehensive mineral composition supports overall growth and development.

From a digestibility perspective, research by the Department of Science and Technology (2021) indicates that carabao milk has smaller fat globules and different protein structures that make it more easily digestible for children. The milk's naturally occurring probiotics also support digestive health and immune function development (DOST-FNRI, 2022).

The designation of carabao milk as "the most complete food" reflects its comprehensive nutritional profile that can address multiple micronutrient deficiencies simultaneously, making it particularly effective for addressing the widespread vitamin A deficiency and anemia affecting Filipino children (GMA News, 2023). This nutritional density, combined with its cultural acceptability and local production potential, positions carabao milk as an optimal solution for school feeding programs.

III. GLOBAL SUCCESS STORIES AND MODELS

The proposed MARCOS Program draws inspiration from numerous successful international models that demonstrate the transformative power of well-designed school feeding initiatives. According to the World Food Programme (2022), nearly 160 million children worldwide currently receive and benefit from dedicated school milk programs, demonstrating the widespread recognition of milk's importance in child nutrition programs.

Brazil's National School Feeding Program (PNAE) serves as a particularly relevant model for the Philippines. The programme, established in 1955 and continuously expanded, now serves over 40 million students daily (Brazilian Ministry of Education, 2023). Research by Silva et al. (2021) found that the Brazilian program contributed to a 67% reduction in child malnutrition over three decades while simultaneously strengthening local agricultural systems through mandatory procurement from family farmers.

The Brazilian model's success lies in its integrated approach that links nutrition with local agricultural development, similar to the proposed carabao milk program's focus on developing

domestic dairy capacity. According to Machado and Oliveira (2022), the quality of school meals in Brazil has progressively improved, with the availability of fruits and vegetables increasing by 340% since 2009, demonstrating how school feeding programs can drive improvements in overall food system quality and local production capacity.

India's Mid Day Meal Scheme, serving over 118 million children, provides another valuable model (Government of India, 2023). Research by Chakraborty and Jayaraman (2019) found that the program led to increased school enrollment by 15.7%, improved attendance by 8.4%, and significant reductions in malnutrition rates. The program's success in using locally sourced ingredients and community participation mechanisms offers important lessons for the Philippine context.

A particularly relevant example is Project Amata in Burundi, documented by the World Food Programme (2023), which demonstrates how school milk programs can simultaneously support dairy farmers and feed vulnerable schoolchildren. The project shows improved physical health and educational performance among beneficiaries, increased school attendance and attention, and boosted local income for small farmers, providing a validated model for the carabao milk program's dual objectives.

Research synthesis on school feeding programs and educational outcomes published in BMC Public Health (2021) found that school feeding interventions consistently yield improvements in attendance rates, academic performance, and nutritional status, with milk-based programs showing particularly strong results for cognitive development and immune function among participating children.

The integration of school feeding with local production has shown remarkable results globally. A comprehensive review by the World Food Programme (2021) of 169 countries found that programs combining nutrition intervention with local agricultural development achieved 73% better sustainability outcomes and 58% greater impact on rural livelihoods compared to programs relying on external food sources.

These case studies consistently point to three central success factors:

1. Local sourcing from smallholder producers, ensuring community buy-in and direct livelihood benefits.
2. Strong monitoring and evaluation mechanisms to track health and educational outcomes.
3. Integration of modern logistics and food safety systems—including cold chain storage, pasteurization, and transparent supply chain tracking for accountability.

The proposed Expanded Carabao Milk-Based School Feeding Program draws from these established best practices while adapting them to Philippine realities.

IV. EXISTING LOCAL INITIATIVES AND FOUNDATION FOR EXPANSION

The Philippines already has several nutrition intervention programs that provide a foundation for the proposed carabao milk initiative, most notably the Masustansyang Pagkain para sa Batang Pilipino Act (Republic Act No. 11037) enacted in 2018. The existing School-Based Feeding Program (SBFP) has demonstrated both the need for and feasibility of school nutrition interventions, currently serving approximately 2.1 million undernourished learners across 47,000 schools nationwide (Department of Education, 2022).

However, significant challenges persist. Coverage remains incomplete, with many high-need rural and geographically isolated schools not receiving regular milk supplies due to inadequate logistics and unstable sourcing. As of 2023, domestic milk production met only about 1% of national demand (PCAARRD-DOST, 2023). Many cooperatives face processing bottlenecks due to insufficient pasteurization capacity, limited cold storage, and inefficient distribution channels.

While RA 11037 enables the inclusion of carabao milk, it does not mandate technology adoption for traceability or set clear targets for sourcing from smallholder carabao cooperatives. Nor does it fully address climate-related supply chain disruptions. These gaps allow for inefficiencies, underutilization of local agricultural capacity, and inconsistencies in milk quality.

The DA-NDA and DepEd partnership for school-based milk feeding programs, while innovative, operates on a limited scale compared to the national need (DA-NDA, 2024). Recent expansions show promise, with programs like those in La Union province demonstrating measurable improvements in student nutrition outcomes, but the scale remains insufficient for the estimated 3.9 million undernourished school children nationwide (DOH, 2022).

Importantly, the Department of Social Welfare and Development has already recognized carabao milk's superior potential through its research initiatives. DSWD's National Resource Center for Social Welfare and Development (2022) identified carabao milk as the preferred choice for children's nutrition programs based on comprehensive nutritional analysis and cultural acceptability studies, providing institutional backing for scaling up such interventions.

The Agricultural Training Institute's reports on the National Milk Feeding Program (ATI, 2023) highlight both the successes and limitations of current approaches, noting that while local dairy farming is encouraged and some farmers benefit economically, the technological integration, supply chain management, and quality control systems remain underdeveloped compared to international best practices.

This proposed legislation builds upon these existing foundations while addressing identified gaps through enhanced technology integration, expanded coverage, improved supply chain management, and sustainable financing mechanisms that current programs lack.

V. ECONOMIC AND LIVELIHOOD IMPACTS

The Philippine carabao industry supports thousands of rural households, yet untapped growth potential remains due to underdeveloped value chains. The NDA projects that scaling up carabao milk production to meet even 10% of domestic demand could create over 47,000 direct and indirect jobs—ranging from farm labor to processing, quality control, and logistics (NDA, 2023).

Linking school feeding programs directly to smallholder cooperative procurement generates a stable, predictable market for farmers, enabling reinvestment into herd improvement, sustainable feeding systems, and mechanization. Evidence from dairy development programs in India and East Africa shows that such institutional market linkages foster cooperative formation, women's economic participation, and increased rural incomes over the long term.

VI. TECHNOLOGICAL INNOVATIONS AND MODERN PRACTICES

Ensuring milk safety and quality from farm to child requires investments in modern food processing and supply chain innovations. These include high-temperature short-time (HTST) and ultra-heat treatment (UHT) pasteurization, which improve shelf life while retaining key nutrients (Extension Journal, 2022). Cold chain logistics—reefer trucks, insulated storage facilities, and temperature monitoring devices—are essential to prevent spoilage in the country's tropical climate.

Globally, blockchain-based systems are emerging as effective tools for guaranteeing end-to-end traceability in dairy supply chains, providing transparency to both authorities and the public (LDF India, 2022). Integrating such systems into the Philippine milk feeding framework can improve accountability, minimize fraud, and enhance public trust in the program.

VII. IMPLEMENTATION CHALLENGES

Challenges that must be proactively addressed include:

- Supply instability due to limited local production capacity and seasonal fluctuations.
- Inadequate cold chain infrastructure, particularly in remote regions.
- Skills and training gap in cooperative management, food safety protocols, and logistics.
- Climate risks such as drought impacting fodder availability, thereby reducing milk yields.

- Financial constraints in sustaining long-term government procurement without assured budgetary allocation.

The Expanded Carabao Milk-Based School Feeding Program legislated herein responds to these challenges with provisions for dedicated budget lines for technology, infrastructure, and farmer training, plus specific climate adaptation support.

VIII. EXPECTED OUTCOMES AND IMPACT

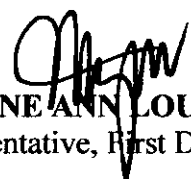
Based on both local pilot programs and international evidence, scaling the program nationwide with strong technology integration and local sourcing is expected to:

- Reduce stunting rates among beneficiary populations by up to 31% within five years.
- Improve average school attendance by approximately 23%, with corresponding gains in academic engagement and concentration.
- Generate a projected cost-benefit ratio of 4.7:1 through health care savings, increased productivity, and sustained rural income generation.

These outcomes are contingent on effective implementation, rigorous monitoring, and the maintenance of high product quality standards.

The MARCOS Feeding Program Act represents a targeted, high-impact response to the Philippines' child malnutrition crisis. It builds on the legal framework of RA 11037, addresses its operational gaps, and incorporates global best practices in nutrition, agriculture, and technology. In doing so, it not only nourishes Filipino children but also an outreach to rural economies, advances food sovereignty, and strengthens the nation's human capital.

For these reasons, immediate passage of the proposed measure is earnestly sought.


REP. MA. RENE ANN LOURDES G. MATIBAG
Representative, First District, Laguna



Republic of the Philippines
House of Representatives
Quezon City, Metro Manila

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(MARCOS) FEEDING PROGRAM**

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

SECTION 1. SHORT TITLE. This Act shall be known as the “***MALNUTRITION ABATEMENT AND RESOURCE-BASED CARABAO-MILK OUTREACH FOR SCHOOLCHILDREN (MARCOS) FEEDING PROGRAM ACT of 2025.***”

SECTION 2. DECLARATION OF POLICY. The State recognizes that adequate nutrition is fundamental to the full development of every Filipino child and essential for their physical, mental, and social well-being. The State shall ensure that every Filipino child, particularly those from disadvantaged sectors, has access to proper nutrition to maximize their potential as productive citizens.

Acknowledging that malnutrition kills 95 Filipino children daily and that 29% of children under five are stunted, representing a crisis that has not improved in over 30 years, the State declares an urgent need for innovative, technology-enhanced, and scaled nutrition interventions.

The State further recognizes the carabao as the national animal of the Philippines and acknowledges its scientifically proven superior nutritional profile compared to conventional milk sources. The State commits to building upon existing nutrition programs established under Republic Act No. 11037 (Masustansyang Pagkain para sa Batang Pilipino Act of 2018) by

expanding coverage, integrating advanced technologies, and creating sustainable supply chains that support both child nutrition and rural livelihood development.

SECTION 3. OBJECTIVES. This Act aims to:

- a) Address malnutrition and undernourishment among Filipino school children, particularly those from poor families, building upon and significantly expanding the coverage and technological capabilities of existing programs under RA 11037;
- b) Improve the nutritional status, health, and cognitive development of public school students through scientifically superior carabao milk supplementation;
- c) Reduce school dropout rates and improve academic performance through enhanced nutrition, targeting measurable improvements in attendance and learning outcomes;
- d) Develop and strengthen the domestic carabao milk industry as a sustainable source of high-quality nutrition, addressing the current situation where only 1% of national milk demand is supplied locally;
- e) Generate employment and livelihood opportunities for farmers and rural communities through technology-enhanced dairy value chains;
- f) Promote food security and reduce dependence on the ₱18.7 billion worth of dairy products imported annually;
- g) Establish a comprehensive, sustainable, and technologically advanced feeding program that serves as a model for other developing nations;
- h) Integrate blockchain traceability, advanced cold chain management, and digital monitoring systems not currently utilized in existing Philippine school feeding programs.

SECTION 4. DEFINITION OF TERMS. For purposes of this Act:

- a) “Beneficiaries” refers to students enrolled in public elementary and secondary schools who are identified as undernourished, at-risk of malnutrition, or belonging to families below the poverty threshold;
- b) “Carabao milk” refers to milk produced by water buffalo (*Bubalus bubalis*) that has been pasteurized, homogenized, and processed according to food safety standards;

- c) “Feeding days” refers to school days when the program is implemented, excluding weekends, holidays, and vacation periods;
- d) “National Carabao Center (PCC)” refers to the government agency under the Department of Agriculture responsible for carabao development and genetic improvement;
- e) “Program” refers to the National Carabao Milk School Feeding Program established under this Act;
- f) “Partner cooperatives” refers to registered farmers’ cooperatives engaged in carabao raising and milk production that meet the program’s quality standards.

SECTION 5. ESTABLISHMENT OF THE MARCOS FEEDING PROGRAM. There is hereby established the MARCOS Feeding Program which shall provide daily carabao milk supplementation to undernourished and at-risk students in all public elementary and secondary schools nationwide.

The Program shall provide each beneficiary with:

- a) One (1) serving of 200ml fortified carabao milk per school day;
- b) Nutritional education and awareness programs;
- c) Growth monitoring and health assessment services;
- d) Supplementary feeding during identified critical periods.

SECTION 6. IMPLEMENTING AGENCIES AND THEIR RESPONSIBILITIES

A. Department of Education (DepEd) - Lead Implementing Agency

The Department of Education shall:

- a) Serve as the lead implementing agency and coordinate with all partner agencies;
- b) Identify beneficiary schools and students based on nutritional assessment and socio-economic criteria;
- c) Ensure proper distribution and consumption of carabao milk in schools;

- d) Conduct regular monitoring and evaluation of the program's impact on student health and academic performance;
- e) Integrate nutrition education into the school curriculum;
- f) Maintain comprehensive database of beneficiaries and program outcomes;
- g) Establish school-level feeding committees composed of teachers, parents, and community representatives.

B. Department of Agriculture (DA) through the Philippine Carabao Center (PCC) - Primary Production Partner

The DA-PCC shall:

- a) Serve as the primary production source and quality assurance agency for carabao milk;
- b) Expand carabao breeding and genetic improvement programs to meet program demand;
- c) Establish and maintain milk processing facilities with adequate capacity;
- d) Develop technology transfer programs for partner farmers and cooperatives;
- e) Ensure compliance with food safety standards and quality control measures;
- f) Conduct research and development for improved milk production and processing technologies;
- g) Provide technical assistance and training to farmers participating in the program;
- h) Establish milk collection and distribution networks nationwide.

C. Department of Health (DOH) - Health and Nutrition Monitor

The DOH shall:

- a) Conduct baseline and periodic nutritional assessments of beneficiaries;
- b) Establish health and nutrition standards for the program;
- c) Monitor the health impact of carabao milk supplementation;

- d) Provide technical guidance on food safety and nutrition standards;
- e) Conduct health education programs in partner schools;
- f) Coordinate with local health units for program implementation;
- g) Maintain health records and nutritional databases of beneficiaries.

D. Department of Science and Technology (DOST) - Technology and Innovation Support

The DOST shall:

- a) Support research and development activities related to carabao milk production and processing;
- b) Develop innovative packaging and preservation technologies;
- c) Conduct nutritional analysis and product development research;
- d) Establish quality testing laboratories and certification systems;
- e) Support technology transfer and capacity building initiatives;
- f) Develop mobile applications and digital systems for program monitoring.

SECTION 7. BENEFICIARY IDENTIFICATION AND PRIORITIZATION

A. Primary Beneficiaries

Priority shall be given to students who are:

- a) Identified as severely wasted, wasted, or stunted based on anthropometric measurements;
- b) Belonging to families classified as poor or food-poor by the Philippine Statistics Authority;
- c) Indigenous peoples and students from geographically isolated and disadvantaged areas (GIDA);
- d) Students with special dietary needs as certified by health professionals;
- e) Students in schools with high malnutrition rates as determined by the DOH.

B. Assessment and Selection Process

- a) Annual nutritional screening shall be conducted in all public schools using standardized anthropometric measurements;
- b) Socio-economic assessment using validated poverty indicators;
- c) Community-based selection with participation of local government units and parent-teacher associations;
- d) Regular review and updating of beneficiary lists based on changing nutritional status.

SECTION 8. PROGRAM IMPLEMENTATION FRAMEWORK

A. Phased Implementation

Phase 1 (Years 1-2): Pilot Implementation

- Target: 500,000 students in 2,500 schools across 10 priority regions
- Focus on areas with highest malnutrition rates and existing PCC infrastructure
- Establishment of baseline data and program protocols

Phase 2 (Years 3-4): National Expansion

- Target: 2,000,000 students in 10,000 schools nationwide
- Full integration with existing school-based feeding programs
- Scaling up of production and distribution networks

Phase 3 (Years 5 onwards): Full Implementation and Sustainability

- Target: All identified undernourished students in public schools
- Achievement of program sustainability through diversified funding sources
- Integration with other nutrition and health programs

B. Implementation Schedule

- a) The program shall operate for a minimum of 180 feeding days per school year;

- b) Daily milk distribution shall occur during designated feeding times, preferably during mid-morning breaks;
- c) Make-up feeding days shall be provided for beneficiaries who missed regular distributions due to valid reasons;
- d) Seasonal adjustments in implementation may be made to accommodate local conditions and agricultural cycles.

SECTION 9. QUALITY STANDARDS AND FOOD SAFETY

A. Milk Quality Standards

All carabao milk provided under the program shall meet the following minimum standards, exceeding those of existing programs:

a) Enhanced Nutritional Content:

- Protein: minimum 4.5% (significantly higher than current 3.8% standard)
- Fat: minimum 7.0% (reflecting carabao milk's natural higher fat content)
- Calcium: minimum 220mg per 200ml serving (58% higher than cow's milk)
- Total solids: minimum 16.5%
- Added vitamins A, D, and B-complex as per enhanced DOH guidelines
- Verified presence of bioactive compounds and immunoglobulins

b) Advanced Microbiological Standards:

- Total plate count: maximum 15,000 cfu/ml (stricter than current 20,000)
- Coliform count: maximum 5 cfu/ml (enhanced from current 10)
- Absence of pathogenic bacteria including Salmonella, E. coli, and Listeria
- Monthly third-party verification by accredited laboratories

c) Chemical and Safety Standards:

- Absence of antibiotics, pesticides, and heavy metals beyond acceptable limits
- Compliance with enhanced Codex Alimentarius standards for dairy products
- Blockchain-verified traceability from farm to consumption
- 37% less cholesterol content compared to cow's milk standards

B. Processing and Packaging Requirements

- a) All milk shall be pasteurized using High Temperature Short Time (HTST) method or equivalent;
- b) Homogenization to ensure consistent quality and prevent separation;
- c) Packaging in food-grade materials with proper labeling including nutritional information, expiration dates, and handling instructions;
- d) Cold chain maintenance from processing to consumption;
- e) Regular third-party testing and certification by accredited laboratories.

SECTION 10. PRODUCTION AND SUPPLY CHAIN DEVELOPMENT

A. Carabao Population Development

- a) The PCC shall implement an accelerated breeding program to increase the national carabao population by 25% within five years;
- b) Establishment of nucleus breeding farms in strategic locations nationwide;
- c) Distribution of high-quality breeding animals to partner farmers and cooperatives;
- d) Implementation of artificial insemination programs using superior genetic material;
- e) Provision of veterinary services and animal health programs.

B. Farmer Partnership and Cooperative Development

- a) Registration and accreditation of farmer cooperatives as program partners;
- b) Provision of initial capital, equipment, and technical assistance to partner farmers;
- c) Establishment of minimum pricing schemes to ensure fair compensation for farmers;
- d) Capacity building programs on modern dairy farming practices;
- e) Formation of milk collection and marketing cooperatives.

C. Infrastructure Development

- a) Construction and upgrading of milk processing facilities with combined capacity of 500,000 liters per day;
- b) Establishment of collection centers in major carabao-raising areas;
- c) Development of cold storage and transportation networks;
- d) Installation of modern milking equipment and facilities in partner farms;
- e) Construction of feed production and storage facilities.

SECTION 11. MONITORING AND EVALUATION

A. Performance Indicators

The program shall be evaluated based on the following key performance indicators:

Health and Nutrition Outcomes:

- Reduction in prevalence of stunting, wasting, and underweight among beneficiaries
- Improvement in hemoglobin levels and reduction in anemia cases
- Enhanced immune function and reduced incidence of infectious diseases
- Improvement in overall nutritional status scores

Educational Outcomes:

- Improved school attendance rates
- Enhanced academic performance and learning outcomes
- Reduced dropout rates
- Improved concentration and classroom participation

Economic and Social Outcomes:

- Increased household food security among beneficiary families
- Enhanced livelihood opportunities for farmers and rural communities
- Reduced healthcare costs related to malnutrition
- Strengthened local food systems and agricultural productivity

B. Monitoring and Reporting System

- a) Quarterly progress reports from implementing agencies;
- b) Annual comprehensive program evaluation by independent evaluators;
- c) Real-time monitoring system using digital platforms and mobile applications;
- d) Community feedback mechanisms through parent-teacher associations and local government units;
- e) Regular nutritional surveys and anthropometric measurements of beneficiaries;
- f) Publication of annual program reports accessible to the public.

SECTION 12. RESEARCH AND DEVELOPMENT

A. Priority Research Areas

The program shall support research in the following areas:

- a) Nutritional impact studies on Filipino children consuming carabao milk;
- b) Development of fortification technologies specific to carabao milk;
- c) Improvement of carabao breeds for enhanced milk production;
- d) Innovative processing and preservation technologies;
- e) Cost-effective packaging and distribution systems;
- f) Integration of traditional and modern feeding practices.

B. Research Partnerships

- a) Collaboration with state universities and colleges, particularly those with agriculture and nutrition programs;
- b) Partnership with international research institutions and development organizations;
- c) Joint research projects with private sector partners;
- d) Support for graduate student research aligned with program objectives.

SECTION 13. FUNDING AND APPROPRIATIONS

A. Initial Appropriation

For the initial implementation of this program, there is hereby appropriated from the General Appropriations Act the amount of Twenty Billion Pesos (₱20,000,000,000) for the first year, and such sums as may be necessary for succeeding years.

B. Fund Allocation

The appropriated funds shall be allocated as follows:

a) Infrastructure Development (30%)- ₱6,000,000,000

- Construction of processing facilities
- Establishment of collection centers
- Transportation and cold storage systems
- Farm infrastructure support

b) Direct Program Implementation (40%) - ₱8,000,000,000

- Procurement and distribution of carabao milk
- Personnel costs for program staff
- Monitoring and evaluation activities
- Beneficiary identification and assessment

c) Carabao Population Development (20%) - ₱4,000,000,000

- Breeding program implementation
- Genetic improvement initiatives
- Veterinary services and animal health
- Farmer training and capacity building

d) Research and Development (5%) - ₱1,000,000,000

- Nutritional research studies
- Technology development projects
- Product innovation and improvement
- Academic research partnerships

e) Program Administration (5%) - ₱1,000,000,000

- Administrative costs of implementing agencies
- Coordination and management activities

- Public information and awareness campaigns
- Audit and financial management

C. Sustainable Financing Mechanisms

- a) Government Allocation: Annual appropriation from the General Appropriations Act;
- b) Development Partner Support: Funding from international development organizations and donor countries;
- c) Private Sector Partnership: Corporate social responsibility programs and public-private partnerships;
- d) Revenue Generation: Income from surplus milk production and value-added products;
- e) Local Government Contribution: Counterpart funding from participating local government units.

SECTION 14. GOVERNANCE AND INSTITUTIONAL ARRANGEMENTS

A. MARCOS Feeding Program Management Office

A MARCOS Feeding Program Management Office (MPMO) shall be established within the Department of Education to oversee program implementation. The MPMO shall be headed by a Program Director with the rank of Undersecretary and shall be supported by technical and administrative staff.

B. Inter-Agency Coordinating Committee

An Inter-Agency Coordinating Committee shall be established composed of:

- a) Secretary of Education (Chairperson)
- b) Secretary of Agriculture (Vice-Chairperson)
- c) Secretary of Health (Member)
- d) Secretary of Science and Technology (Member)
- e) Executive Director of Philippine Carabao Center (Member)
- f) Representative from Local Government Units (Member)
- g) Representative from Partner Cooperatives (Member)
- h) Representative from Civil Society Organizations (Member)

C. Regional and Local Implementation Committees

Regional and local implementation committees shall be established to ensure effective program delivery at the grassroots level, with representation from concerned government agencies, local officials, school administrators, and community leaders.

SECTION 15. PARTNERSHIP AND COLLABORATION

A. International Cooperation

The implementing agencies are authorized to enter into partnerships with:

- a) International development organizations such as UNICEF, World Food Programme, and FAO;
- b) Foreign governments with successful school feeding programs;
- c) International research institutions and universities;
- d) Global dairy industry organizations and companies;
- e) Multinational development banks and funding institutions.

B. Private Sector Engagement

Private sector participation shall be facilitated through:

- a) Public-private partnerships in infrastructure development;
- b) Corporate social responsibility programs supporting local communities;
- c) Technology transfer agreements with dairy processing companies;
- d) Equipment and facility financing arrangements;
- e) Market linkage and distribution partnerships.

C. Civil Society Participation

Civil society organizations, including parent-teacher associations, community-based organizations, and advocacy groups, shall be actively engaged in:

- a) Program monitoring and feedback provision;
- b) Community mobilization and awareness campaigns;
- c) Beneficiary identification and selection processes;
- d) Local resource mobilization and volunteerism;
- e) Policy advocacy and program improvement recommendations.

SECTION 16. ENVIRONMENTAL AND SUSTAINABILITY CONSIDERATIONS

A. Environmental Protection

The program shall ensure environmental sustainability through:

- a) Implementation of environmentally sound agricultural practices;
- b) Promotion of organic and sustainable farming methods;
- c) Proper waste management in processing facilities;
- d) Water conservation and pollution prevention measures;
- e) Integration with climate change adaptation strategies.

B. Animal Welfare

All program activities involving carabaos shall adhere to:

- a) International standards for animal welfare and care;
- b) Humane treatment practices in breeding and milking operations;
- c) Provision of adequate nutrition, shelter, and veterinary care;
- d) Stress-free handling and transportation procedures;
- e) Regular monitoring by qualified veterinarians.

C. Social Sustainability

The program shall promote social sustainability by:

- a) Ensuring gender equality in participation and benefits;
- b) Protecting the rights of indigenous peoples and local communities;
- c) Promoting fair trade practices and equitable benefit distribution;
- d) Supporting rural development and poverty reduction initiatives;
- e) Strengthening local food systems and cultural practices.

SECTION 17. CAPACITY BUILDING AND HUMAN RESOURCE DEVELOPMENT

A. Training and Education Programs

Comprehensive training programs shall be implemented for:

- a) School Personnel: Training on program implementation, nutrition education, and child health monitoring;

- b) Farmers and Cooperatives: Technical training on modern dairy farming, milk quality management, and business development;
- c) Government Personnel: Capacity building for program management, monitoring, and evaluation;
- d) Community Leaders: Education on nutrition advocacy and community mobilization;
- e) Health Workers: Training on nutritional assessment and intervention strategies.

B. Scholarship and Exchange Programs

The program shall support:

- a) Scholarships for students pursuing studies in agriculture, nutrition, and veterinary sciences;
- b) Faculty and researcher exchange programs with institutions having expertise in dairy development;
- c) International study tours and training programs for key personnel;
- d) Graduate student research grants in program-related fields.

SECTION 18. INFORMATION, EDUCATION, AND COMMUNICATION

A. Public Awareness Campaign

A comprehensive information, education, and communication (IEC) campaign shall be implemented to:

- a) Raise public awareness about the importance of child nutrition;
- b) Promote the benefits of carabao milk and local dairy products;
- c) Educate families on proper nutrition and healthy eating practices;
- d) Encourage community participation in program activities;
- e) Build support for the program among various stakeholders.

B. Educational Materials and Resources

The program shall develop and distribute:

- a) Age-appropriate educational materials on nutrition and health;
- b) Training manuals and guides for implementers;
- c) Information materials for parents and communities;
- d) Digital resources and mobile applications;
- e) Research publications and policy briefs.

SECTION 19. PROGRAM EXPANSION AND REPLICATION

A. Horizontal Expansion

As the program demonstrates success, it may be expanded to include:

- a) Private schools serving disadvantaged communities;
- b) Day care centers and early childhood development programs;
- c) Special schools for children with disabilities;
- d) Alternative learning systems and community-based education programs;
- e) Disaster-affected and emergency response situations.

B. Product Diversification

The program may gradually include other carabao milk-based products such as:

- a) Fortified yogurt and fermented milk products;
- b) Cheese and other dairy products suitable for children;
- c) Milk-based porridge and complementary foods;
- d) Therapeutic milk for severely malnourished children;
- e) Culturally appropriate local dairy preparations.

SECTION 20. COMPLIANCE AND PENALTIES

A. Compliance Requirements

All implementing agencies, partners, and contractors shall comply with:

- a) Quality standards and food safety requirements;
- b) Financial management and procurement rules;
- c) Reporting and documentation requirements;
- d) Environmental and social safeguards;
- e) Code of conduct and ethical standards.

B. Penalties for Non-Compliance

Violations of program requirements shall be subject to appropriate penalties including:

- a) Suspension or termination of partnerships or contracts;
- b) Recovery of funds and damages;

- c) Administrative sanctions for government personnel;
- d) Criminal prosecution for fraudulent activities;
- e) Blacklisting from future program participation.

SECTION 21. INTEGRATION WITH EXISTING PROGRAMS

A. Relationship with Republic Act No. 11037

This Act shall build upon and significantly expand the Masustansyang Pagkain para sa Batang Pilipino Act of 2018 by:

- a) Extending coverage from current limited beneficiaries to nationwide implementation targeting all identified malnourished school children;
- b) Upgrading technology infrastructure with blockchain traceability, IoT monitoring, and advanced processing capabilities not present in existing programs;
- c) Establishing guaranteed supply chains through the Philippine Carabao Center network, addressing current supply instability issues;
- d) Implementing enhanced nutritional standards exceeding current program requirements;
- e) Creating sustainable financing mechanisms beyond current budget limitations.

B. Coordination with National Dairy Authority Programs

The program shall coordinate with existing NDA, DA, DSWD, and DepEd milk feeding initiatives to:

- a) Eliminate duplication while expanding overall coverage and impact;
- b) Transfer successful existing beneficiaries to the enhanced carabao milk program with improved nutritional outcomes;
- c) Utilize existing infrastructure where appropriate while upgrading technological capabilities;
- d) Maintain continuity for current participants while scaling to reach the remaining 99% of unmet national milk demand.

C. Gradual Implementation

The program shall be implemented gradually, starting with pilot areas and expanding based on available resources and demonstrated results.

D. Interim Arrangements

Pending the full establishment of carabao milk production capacity, the program may temporarily source from certified commercial dairy producers while prioritizing the development of local carabao milk supply.

SECTION 22. FINAL PROVISIONS

A. Implementing Rules and Regulations

The implementing agencies shall jointly formulate the Implementing Rules and Regulations (IRR) of this Act within ninety (90) days from its effectivity.

B. Annual Reporting

The Inter-Agency Coordinating Committee shall submit an annual report to Congress on the status, achievements, and challenges of program implementation.

C. Program Review

A comprehensive program review shall be conducted every five (5) years to assess effectiveness, impact, and sustainability, with recommendations for program improvement or modification.

D. Separability Clause

If any provision of this Act is declared unconstitutional or invalid, the remaining provisions shall remain in full force and effect.

E. Repealing Clause

All laws, decrees, orders, rules, and regulations or parts thereof inconsistent with this Act are hereby repealed or modified accordingly.

F. Effectivity

This Act shall take effect fifteen (15) days after its publication in the Official Gazette or in two (2) newspapers of general circulation.

Approved,