

# CARABAO-BASED BUSINESS PORTFOLIO

Series | Number 9



Department of Agriculture  
PHILIPPINE CARABAO CENTER  
CERTIFIED ISO 9001 | ISO 14001 | ISO 45001

AN INVESTMENT  
OVERVIEW



SMALL-SCALE DAIRY PROCESSING FACILITY BUSINESS

SMALL-SCALE

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# SMALL-SCALE DAIRY PROCESSING FACILITY BUSINESS

## An Investment Overview

Monitoring and Business Planning Support Section  
Planning and Information Management Division  
DA-Philippine Carabao Center National Headquarters and Gene Pool

Publications in the "Carabao-Based Business Portfolio Series":

1. 5-Cow Start-up Dairy Buffalo Farm Business: An Investment Overview
2. 10-Cow Start-up Dairy Buffalo Farm Business: An Investment Overview
3. 15-Cow Start-up Dairy Buffalo Farm Business: An Investment Overview
4. 20-Cow Start-up Dairy Buffalo Farm Business: An Investment Overview
5. 25-Cow Start-up Dairy Buffalo Farm Business: An Investment Overview
6. 50-Cow Start-up Dairy Buffalo Farm Business: An Investment Overview
7. Corn Silage Production: An Investment Overview
8. Vermicast Production Business: An Investment Overview
9. Small-Scale Dairy Processing Facility Business: An Investment Overview
10. Dairy Box One-Stop Shop Business: An Investment Overview
11. Kardeli Meat Products Retail Business: An Investment Overview



# **SMALL-SCALE DAIRY PROCESSING FACILITY BUSINESS**

An Investment Overview



# FOREWORD

The current national landscape defines the Philippines as undergoing challenges because of economic shocks and market instability as consequences of the recent pandemic, international disputes, and natural calamities. The goal is to recover as soon as possible, strategically refocus in time of the new leadership, and continue with our allegiance to the global Sustainable Development Goals. The Department of Agriculture (DA) is vital in the attainment of the president's 8-point economic agenda, particularly those concerning food security, job creation, and investment flow to the agriculture sector – all towards reduced vulnerability, hunger, and poverty.

Attached to the DA, the Philippine Carabao Center is mandated through RA 7307 to conserve, propagate, and promote the carabao as a source milk, meat, draft power, and hide. Since its creation in 1992, the agency has established its credibility as a premiere research and development institution serving as the lead agency for livestock and biotechnology research pursuant to DA AO no. 9 s. 2008, and just recently, as the National Livestock Cryobank for the department. DA-PCC have become a vital cog in the livestock industry working closely with various international and local funding institutions, national legislators, private organizations, LGUs, and all the other players across the carabao value chain towards increasing productivity, championing innovations, and proving the economic viability of carabao-based businesses.

With the reception of the 2018 released prototype publication of DA-PCC's Carabao-Based Business Portfolio Series featuring the investment requirement and financial viability of 6 Dairy Buffalo Businesses, to wit:

- (1) 5-Cow Start-up Dairy Buffalo Farm Business,**
- (2) 10-Cow Start-up Dairy Buffalo Farm Business,**
- (3) 15-Cow Start-up Dairy Buffalo Farm Business,**
- (4) 20-Cow Start-up Dairy Buffalo Farm Business,**
- (5) Silage Production, and**
- (6) Dairy Box One-Stop Shop.**



This official publication of investment guide is hereby issued to update the technical and economic assumptions given the innovations and the price changes of late. Additional businesses will also be introduced, and opportunities were divided in categories making the final portfolio that will be released in 2024 to 2027 consisting of the final investment modules as follows:

### **A. Dairy Value Chain**

- 5-Cow Start-up Dairy Buffalo Farm Business
- 10-Cow Start-up Dairy Buffalo Farm Business
- 15-Cow Start-up Dairy Buffalo Farm Business
- 20-Cow Start-up Dairy Buffalo Farm Business
- 25-Cow Start-up Dairy Buffalo Farm Business
- 50-Cow Start-up Dairy Buffalo Farm Business
- Small-scale Dairy Processing Facility Business
- Dairy Box One-Stop-Shop Business

### **B. Meat Value Chain**

- 5 Carabao Fattening Business
- 10 Carabao Fattening Business
- Kardeli Meat Products Retail Business

### **C. Dairy and Meat Value Chain Inputs**

- Vermicast Production Business
- Corn Silage Production Business
- Individual/ Group AI Business
- Semen Straw Production

These publications are designed to guide potential investors as they consider venturing in the carabao value chain. Information on what crucial factors and events should and should not happen to earn profits in the long run are all included in the assumptions formulated after a series of consultation with DA-PCC technical experts, farmers, and other value chain players in the field.

With the effects of the National Feeding Program pursuant to RA 11037 also known as the “Masustansiyang Pagkain Para sa Batang Pilipino Act”, and the Carabao-based Business Improvement Network (CBIN) and Coconut-Carabao Development Project (CCDP) championed by Sen. Cynthia A. Villar, the carabao sector has gained much stability that it thrived even during the pandemic. These factors, along with DA-PCC’s brand of research, business, technical, market, and extension services provision

make the carabao value chain a promising investment opportunity. This portfolio conveys DA-PCC’s honest commitment to stimulating investment not just for the carabao sector but also for the agriculture sector in general. These business modules were just some of the tools that DA-PCC had developed to ensure a more private-led and thriving carabao value chain.

*Mabuhay ang sektor ng Kalabawan!*



**DR. LIZA G. BATTAD**  
Executive Director



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# INTRODUCTION

We present to you the Small-Scale Dairy Processing Facility Business as derived from the Dairy Value Chain segment of the Carabao Value Chain with an initial investment requirement of PHP9,126,635.66, and is projected to earn an Internal Rate of Return of 21.10%, with a payback period of 6.44 years.

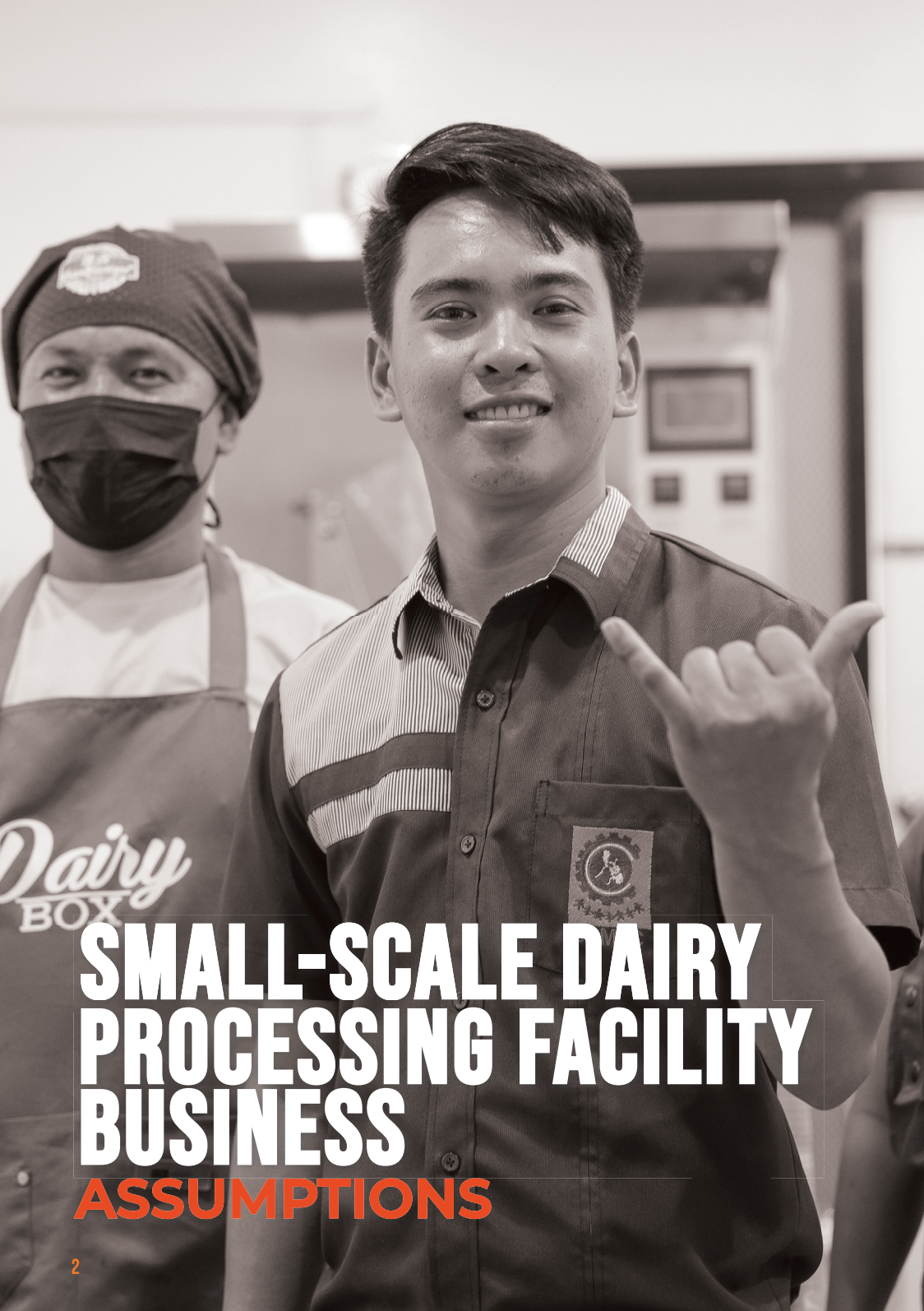
Like each investment opportunity presented in the series, we begin with a set of assumptions from the technical, economic, and market aspects of the business. This section must be read thoroughly specially for interested investors with little to no background in the investment opportunity at hand. This is followed by a conceptual discussion of selected investment worthiness indicators i.e. Net Present Value, Hurdle Rate, Internal Rate of Return, Payback Period, Profitability Index, and Initial Investment requirement. A dedicated page showing the Summary of Profitability Indicators follows showing the numerical merits of the opportunity.

Details of the 10-year analysis follow starting with the projected Income Statement which shows the annual Revenues, Expenses, Net Income, and ROI. Supporting notes for specific revenues and expense items were provided afterward to show how the amounts were computed. Projected Cash Flows were then shown from which the investment worthiness indicators were generated. Finally, for the quantitative parts, the breakdown of the initial investment requirement was also provided with details as may be necessary.

Succeeding pages contain other vital information to wit:

(1) Profitability Indicators, Summary of All Business Modules in the Portfolio, (2) Testimonial from actual adopters, (3) List of available DA-PCC technologies and contact information, (4) Inventory of best practices, (5) Glossary of terms, (6) Authors and other contact information, and (7) Pool of Technical Experts.





*Dairy*  
BOX

# SMALL-SCALE DAIRY PROCESSING FACILITY BUSINESS

## ASSUMPTIONS

# THE PRIME PROCESSING

The Small-scale processing facility business' main objective is to absorb the raw milk produced by the carabaos of the surrounding community and process them into various dairy products to supply the new and existing dairy outlets. A variety of food products can be processed, depending on the demand and location of the facility and market profile in the area. This can also support the RA 11037 also known as, "Masustansiyang

Pagkain para sa Batang Pilipino Act", which is a government act to provide toned milk and other feeding programs to Filipino children for fighting malnutrition.

The Dairypreneur's PHP9,126,635.69 small-scale processing facility investment sets up a kitchen-type line of equipment and processes 80-100 liters of raw milk per processing day. It operates for 312 days with 6 days of processing per week.

This venture has a payback period of 6.44 years and is projected to gain internal rate of return of 21.10% and have a net present value of PHP1.1M in 10 years.

The following Small-scale Processing Facility Business Assumptions were created in reference to actual business performance of DA-Philippine Carabao Center at Central Luzon State University (CLSU) operations and projected assumptions.

# ASSUMPTIONS REVENUES

The following assumptions were based on projections from an existing small-scale processing facility of DA-PCC at CLSU:



73 liters per day for 312 days per year are processed.



8 distinct products (pasteurized milk, choco milk, lacto juice, coffee milk, pastillas, yogurt drink, ice cream, and kesong puti) are introduced in the processing facility.



Daily sales per product for year one(1) is estimated at 10 units or 240 units per month.



For the succeeding years, total quantity of products sold is projected to increase by 5%.



Selling price per unit of product was averaged at 119.00 pesos for year 1 increasing by 3% every 3 years thereafter to account for inflation.

# ASSUMPTIONS EXPENSES

The following standard costs were based on projections from an existing small-scale processing facility of DA-PCC at CLSU:



Cost of sales is estimated to increase by 5% annually.



Rent expense estimated monthly rate is 15,000.00 increasing by 20% every 3 years interval.



Taxes and licenses cost for year 1 was estimated at 23,550.00 pesos increasing by 5% every 3 years thereafter.



Salaries and other benefits expense were pegged to include 20 employees (direct labor, indirect labor, sales and administrative), starting at an average daily rate of PHP420.00 increasing by 5% every 3 years covering 312 workdays per year.

Expense	Cost (in PHP)
Repairs and Maintenance Expense	2,784.10
Administrative Expense	39,176.81
Transportation Expense	3,609.31
Miscellaneous Expense	21,577.40
Depreciation Expense	20,495.40

# ASSUMPTIONS NET INCOME AND RETURN ON INVESTMENT



Annual return on investment is computed by dividing accrual net income by total accrual expenses

$$ROI = \left( \frac{\text{ACCRUAL NET INCOME}}{\text{ACCRUAL NET EXPENSES}} \right) \times 100$$



Annual net income is computed by deducting the total expenses from the total revenues under accrual accounting method.

$$\text{ANNUAL NET INCOME} = \text{TOTAL REVENUES} - \text{TOTAL EXPENSES}$$

# INVESTMENT-WORTHINESS INDICATORS

For identifying the investment worthiness of this portfolio, following indicators were computed as follows:

**Net Present Value of Cash Flows** is computed by discounting annual cash flows using a hurdle rate of 14%

**Hurdle Rate** is the minimum rate that a company expects to earn when investing in a project. Hence the hurdle rate is also referred to as the company's required rate of return or target rate. In order for a project or business venture to be accepted, its internal rate of return must exceed the hurdle rate.

Here, the hurdle rate is assumed to be 14%. Hence, the portfolio must carry an Internal Rate of Return higher than 14% or else, the investment will have to be rejected.<sup>[1]</sup>

**Internal Rate of Return (IRR)** is a metric used in evaluating investment options to estimate the profitability of potential investments. IRR may be understood as the rate of growth a project or business is expected to generate across a specified time frame.

For this investment portfolio, IRR is also estimated and compared vis-à-vis the set hurdle rate of 14%. The IRR should be greater than 14% to become investment-worthy.<sup>[2]</sup>

**Payback Period** is the time at which all initial investments will be recuperated. An investment portfolio of this type should return a Payback Period of at most 6 to 7 years. With this, it is imperative to note that Dairy Processing Business is for committed businessmen only.

**Profitability Index.** All annual Net Cash Inflows (disregarding the initial investment) are discounted using the hurdle rate of 14% for indexing purposes with the amount of Initial Investment. This is actually the model used for ranking different investment portfolios. As a general rule, the profitability index should be greater than 1.

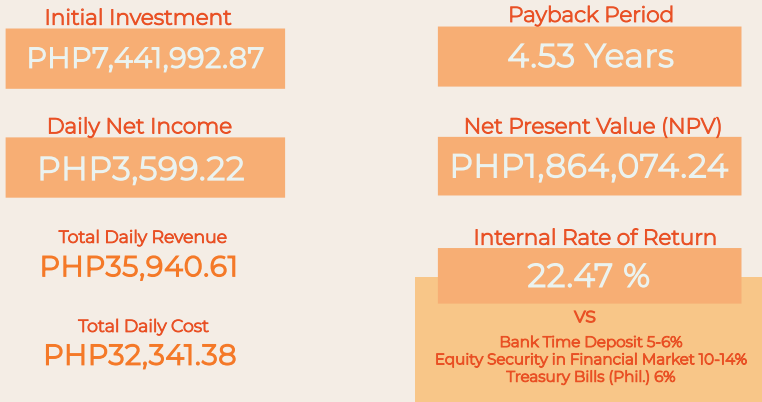
**Initial Investment** is the summation of the estimated capital investment requirement (i.e. property, plant, and equipment, working capital).

[1] Averkamp, Harold (CPA, MBA. What is hurdle rate?. Accounting Coach, 2018. <https://www.accountingcoach.com/blog/what-is-hurdle-rate>. March 7, 2018

[2] Internal Rate of Return – IRR. Investopedia, 2018. <https://www.investopedia.com/terms/i/irr.asp>. March 7, 2018

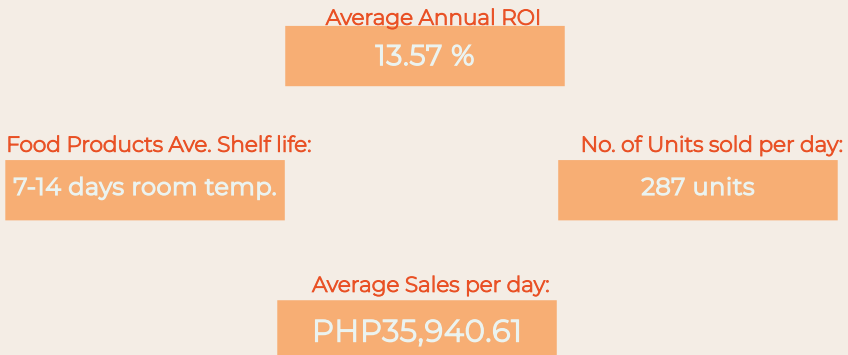
# SMALL-SCALE DAIRY PROCESSING FACILITY BUSINESS

## SUMMARY OF PROFITABILITY INDICATORS BASED ON ZERO-DEBT 10-YEAR PROJECTION



20 staff with a combination of Direct Labor, Indirect Labor, Sales, and Administrative staff

## Buffalo Dairy-based Products





We see the 5-Cow Start-up Dairy Buffalo Farm Business as an advancement from smaller herd sizes prevailing in rural farms.

This upgraded level has resulted from owners' commitment in stabilizing their farm's financial and operational viability.

At this level of operation, the farm is gradually adopting carabao raising technologies and ideal farm management practices.

Dairy Farms with 5-9 cow heads may earn an average daily net income of PHP1,407.04 per day. In this stage and scale, the key to achieve a felt stability in running a farm business is to continue growing and upgrading the herd through either breeding or acquisition.

INTRODUCTION TO  
**FINANCIAL  
STATEMENTS**



SAN JULIS  
EST. 1950

SAN JULIS  
STERILIZED MILK

SAN JULIS  
STERILIZED MILK

STERILIZED MILK

# REVENUE FORECAST PROJECTED INCOME STATEMENT

## CASE 1: ZERO DEBT

	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Gross Sales	4,509,387.66	9,085,650.00	9,539,932.50	10,517,775.58
Cost of Goods Sold	2,903,627.70	6,124,382.33	6,733,681.51	7,441,433.87
<b>Gross Income</b>	<b>3,081,270.00</b>	<b>2,961,267.68</b>	<b>2,806,250.99</b>	<b>3,076,341.71</b>
<b>Less: Other Operating Expenses</b>				
Repairs and Maintenance Expenses	17,410.75	33,409.25	33,409.25	35,079.71
Administrative Expense	244,997.25	470,121.75	470,121.75	564,146.10
Depreciation Expense	128,170.60	245,944.75	245,944.75	245,944.75
Transportation Expense	22,571.31	43,311.77	43,311.77	45,477.36
Interest Expense				
Other Miscellaneous Expense	134,937.03	258,928.76	258,928.76	271,875.20
<b>Total Other Expenses</b>	<b>548,086.95</b>	<b>1,051,716.28</b>	<b>1,051,716.28</b>	<b>1,162,523.12</b>
<b>Net Income before Interest and Taxes</b>	<b>1,057,673.00</b>	<b>1,909,551.39</b>	<b>1,754,534.71</b>	<b>1,913,818.59</b>
Less: Taxes and Licences	147,274.19	282,602.35	282,602.35	296,732.46
<b>Net Income</b>	<b>910,398.82</b>	<b>1,626,949.05</b>	<b>1,471,932.36</b>	<b>1,617,086.13</b>
<b>ROI*</b>	<b>25.30%</b>	<b>21.81%</b>	<b>18.24%</b>	<b>18.17%</b>

*\*For the purpose of continually computing the ROI after the initial investment, the total expenses will be considered as the annual "investment". The new formula of the annual ROI will be: Net income divided by Total Expenses. This is with the assumption that annual total expenses are considered investments in the business.*



# NT (PHP)

## SMALL SCALE DAIRY PROCESSING FACILITY BUSINESS

YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
11,043,664.36	11,595,847.58	12,784,421.96	13,423,643.05	14,094,825.21	15,539,544.79
8,182,040.84	8,998,560.03	9,941,972.43	10,934,456.60	12,028,670.40	10,030,542.29
<b>2,861,623.52</b>	<b>2,597,287.55</b>	<b>2,842,449.53</b>	<b>2,489,186.45</b>	<b>2,066,154.80</b>	<b>5,509,002.50</b>
35,079.71	35,079.71	36,833.70	36,833.70	36,833.70	38,675.38
564,146.10	564,146.10	676,975.32	676,975.32	676,975.32	812,370.39
245,944.75	245,944.75	245,944.75	245,944.75	245,944.75	245,944.75
45,477.36	45,477.36	47,751.23	47,751.23	47,751.23	50,138.79
271,875.20	271,875.20	285,468.96	285,468.96	285,468.96	299,742.41
<b>1,162,523.12</b>	<b>1,162,523.12</b>	<b>1,292,973.96</b>	<b>1,292,973.96</b>	<b>1,292,973.96</b>	<b>1,446,871.71</b>
<b>1,699,100.40</b>	<b>1,434,764.43</b>	<b>1,549,475.57</b>	<b>1,196,212.49</b>	<b>773,180.85</b>	<b>805,791.95</b>
296,732.46	296,732.46	311,569.09	311,569.09	311,569.09	327,147.54
<b>1,402,367.94</b>	<b>1,138,031.97</b>	<b>1,237,906.49</b>	<b>884,643.41</b>	<b>461,611.76</b>	<b>478,644.41</b>
<b>14.55%</b>	<b>10.88%</b>	<b>10.72%</b>	<b>7.00%</b>	<b>3.39%</b>	<b>3.18%</b>



# REVENUE FORECAST PROJECTED INCOME STATEMENT

## CASE 2: 25% DEBT

	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Gross Sales	4,509,387.66	9,085,650.00	9,539,932.50	10,517,775.58
Cost of Goods Sold	2,903,627.70	6,124,382.33	6,733,681.51	7,441,433.87
<b>Gross Income</b>	<b>1,605,759.96</b>	<b>2,961,267.68</b>	<b>2,806,250.99</b>	<b>3,076,341.71</b>
<b>Less: Other Operating Expenses</b>				
Repairs and Maintenance Expenses	17,410.75	33,409.25	33,409.25	35,079.71
Administrative Expense	244,997.25	470,121.75	470,121.75	564,146.10
Depreciation Expense	128,170.60	245,944.75	245,944.75	245,944.75
Transportation Expense	22,571.31	43,311.77	43,311.77	45,477.36
Interest Expense	145,435.82	223,259.79	167,444.84	111,629.89
Other Miscellaneous Expense	134,937.03	258,928.76	258,928.76	271,875.20
<b>Total Other Expenses</b>	<b>693,522.77</b>	<b>1,274,976.07</b>	<b>1,219,161.12</b>	<b>1,274,153.01</b>
<b>Net Income before Interest and Taxes</b>	<b>912,237.18</b>	<b>1,686,291.61</b>	<b>1,587,089.87</b>	<b>1,802,188.70</b>
Less: Taxes and Licences	147,274.19	282,602.35	282,602.35	296,732.46
<b>Net Income</b>	<b>764,963.00</b>	<b>1,403,689.26</b>	<b>1,304,487.52</b>	<b>1,505,456.24</b>
<b>ROI*</b>	<b>20.43%</b>	<b>18.27%</b>	<b>15.84%</b>	<b>16.70%</b>

*\*Interests are computed at 15% annual rate*

*\*\*For the purpose of continually computing the ROI after the initial investment, the total expenses will be considered as the annual "investment". The new formula of the annual ROI will be: Net income divided by Total Expenses. This is with the assumption that annual total expenses are considered investments in the business.*



# NT (PHP)

## SMALL SCALE DAIRY PROCESSING FACILITY BUSINESS

YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
11,043,664.36	11,595,847.58	12,784,421.96	13,423,643.05	14,094,825.21	15,539,544.79
8,182,040.84	8,998,560.03	9,941,972.43	10,934,456.60	12,028,670.40	13,286,881.12
<b>2,861,623.52</b>	<b>2,597,287.55</b>	<b>2,842,449.53</b>	<b>2,489,186.45</b>	<b>2,066,154.80</b>	<b>2,252,663.67</b>
35,079.71	35,079.71	36,833.70	36,833.70	36,833.70	38,675.38
564,146.10	564,146.10	676,975.32	676,975.32	676,975.32	812,370.39
245,944.75	245,944.75	245,944.75	245,944.75	245,944.75	245,944.75
45,477.36	45,477.36	47,751.23	47,751.23	47,751.23	50,138.79
55,814.95					
271,875.20	271,875.20	285,468.96	285,468.96	285,468.96	299,742.41
<b>1,218,338.07</b>	<b>1,162,523.12</b>	<b>1,292,973.96</b>	<b>1,292,973.96</b>	<b>1,292,973.96</b>	<b>1,446,871.71</b>
<b>1,643,285.45</b>	<b>1,434,764.43</b>	<b>1,549,475.57</b>	<b>1,196,212.49</b>	<b>773,180.85</b>	<b>805,791.95</b>
296,732.46	296,732.46	311,569.09	311,569.09	311,569.09	327,147.54
<b>1,346,552.99</b>	<b>1,138,031.97</b>	<b>1,237,906.49</b>	<b>884,643.41</b>	<b>461,611.76</b>	<b>478,644.41</b>
<b>13.89%</b>	<b>10.88%</b>	<b>10.72%</b>	<b>7.06%</b>	<b>3.39%</b>	<b>3.18%</b>



# PROJECTED CASHFLOW

## ASSUMPTIONS

**Hurdle Rate**  
used for Discounting Purposes  
14%

**Working Capital**  
PHP1,735,409.12

**Capital Investment**  
PHP5,706,583.75

**Total Initial Investment**  
PHP7,441,992.87

## CASHFLOWS

### CASE 1 ZERO DEBT

YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9
958,281.42	2,011,384.59	1,723,540.43	1,871,136.70	1,655,333.06	1,391,791.70	1,494,709.78	1,140,269.09	718,329.59

### CASE 2 25% DEBT

YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9
664,005.74	1,360,210.21	1,128,181.00	1,331,592.21	1,171,603.52	1,391,791.70	1,494,709.78	1,140,269.09	718,329.59





# SMALL SCALE DAIRY PROCESSING FACILITY BUSINESS

	Present Value of Cash Flows	NPV	IRR	Payback Period (Years)	Profitability Index
YEAR 10 739,168.33	7,570,657.99	1,864,074.24	22.47%	4.53	1.33
YEAR 10 739,168.33	5,838,925.63	132,341.88	14.58%	6.26	1.02



# INITIAL INVESTMENT FOR A FULL-SIZE SMALL-SCALE PROCESSING FACILITY

Items	Total(PHP)
<b>Building Improvement</b>	
Processing Equipment	1,639,720.45
<b>Machineries and Equipment</b>	
Non-Processing Equipment	762,453.16
Sales Vehicle	108,378.00
Laboratory Equipment	147,874.48
<b>Furniture and Fixtures</b>	
Milk Processing Plant	2,886,000.00
Store Supplies, Decor, Marketing	162,157.67
<b>Working Capital for 6 months</b>	<b>1,735,409.12</b>
<b>Total Investment</b>	<b><u>7,488,895.09</u></b>

*\*Based on the PCC at CLSU Small-scale Processing Facility Operations*




# POOL OF TECHNICAL EXPERTS

Equally important as investing in superior breeding stocks and optimal equipment and other physical properties are capitalizing on the know-how and technical knowledge in dairy farming. The team of experts and extension workers of the DA-Philippine Carabao Center shall provide for your needs on practical expertise. Listed below are the DA-PCC units to provide an array of support for your dairy farm start-up:

<b>Dairy Herd Acquisition</b>	<b>Operations Group</b>	<b>Edwin C. Atabaz</b> Scientist II Head, Operations
<b>Farm Management &amp; Veterinary Support Services</b>	<b>National Dairy Business Hub (NDBH)</b>	<b>Cyril P. Baltazar</b> Farm Superintendent II NDBH Coordinator
<b>Feeding Management/ Forage Management</b>	<b>Production Systems &amp; Nutrition Section (PSNS) /Gene Pool</b>	<b>Mary Rose D. Uy-De Guia</b> Senior Science Research Specialist Head, PSNS <b>Lawrence P. Belotindos</b> Science Research Specialist I Head, Gene Pool
<b>Breeding/Artificial Insemination</b>	<b>Animal Breeding and Genetics Section (ABGS)/ Reproduction &amp; Physiology Section (RPS)</b>	<b>Ester B. Flores</b> Scientist I Head, ABGS <b>Excel Rio S. Maylem</b> Senior Science Research Specialist Head, RPS
<b>Dairy Business Feasibility/ Operational &amp; Financial Status Check</b>	<b>Monitoring and Business Planning Support Section (MBPSS)</b>	<b>Pauline A. Maramag</b> Project Evaluation Officer II Head, MBPSS
<b>Milk Handling/Milk Processing/Trade and Marketing</b>	<b>Carabao Enterprise Development Section (CEDS)</b> <b>Product Development and Innovation Unit</b> <b>Processing and Marketing Unit (PMU) Outlet</b>	<b>Patrizia Camille O. Saturno</b> Science Research Specialist II Head, CEDS <b>Teresita M. Baltazar</b> Science Research Specialist I Head, PDIU <b>Marivic A. Orge</b> Project Development Officer II Manager, CDCPF <b>Jeraldin S. Torres</b> Marketing Manager Manager, Milka Krem Outlet
<b>Information on Training and other Services Provided by DA-PCC</b>	<b>Knowledge Management Division</b>	<b>Khrizie Evert M. Padre</b> Information Officer II Head, Learning Events Coordination Section

You can reach our pool of technical experts at:

 (044) 456 0731 to 34

 (044) 456 0730

 oed@pcc.gov.ph



# TESTIMONIAL

“

Nagsimula kami noong May 17, 2019. Noong una naggagatas lang kami gamit ang kalabaw ng ibang famer, sinasanay namin yung mga tauhan namin kung saan nakakakuha sila ng 1 liter araw-araw. Ang nagging process non, kusina lang talaga tapos ay ipinapainom namin sa mga anak namin. Nang manganak na yung first calf namin which is crossed breed, doon kami nag simula na gumawa ng iba pang flavors. At noong makatanggap kami ng magagandang komento at maganda ang pagtanggap ng tao, sinubukan na naming i-up scale ito para sa community. Pero gaya ng ibang negosyo, nagkaroon rin kami ng problema kung saan naikukumpara ang aming mga produkto sa ice candy dahil naibebenta ito sa mas murang halaga. Bukod pa rito, nag rely din kami sa milk feeding kaya walang natatapon na mga products. Ang problema lamang ay seasonal at napakalayo ng gap bago ang susunod na program.

Malaki ang naitulong sa amin ng DA-PCC, dahil sa mga training nila, doon ako natuto kung paano mag process. Nabigyan din ako ng mga kalabaw galing sa DA-PCC at mga equipment gaya ng milk cans at freezer. Sa tulong ng DA-PCC pati na rin ng ibang government agencies, nag open ang maraming opportunity sa amin dahil sa iba't ibang programa ng inooffer nila.

*We started on May 17, 2019. At first we were only able to collect milk using the buffalo of another farmer, we trained our staff where they harvest 1 liter of milk everyday. During the first time, it is only processed inside the kitchen and then we only serve it to our children. When our first cross-bred calf was born, that's when we started making other flavors. And when we got good feedback and people accepted it well, we tried to scale it up for the community. But like any other business, we also had a problem where our products were compared to other products because of their cheaper prices. In addition, we also rely on milk feeding that's why no products are being wasted. The only problem is that it is seasonal and the gap before the next program is very long.*

*DA-PCC helped us a lot. Because of their training programs, I learned how to process. I was also given cows from DA-PCC and equipment such as milk cans and freezers. With the help of DA-PCC as well as the other government agencies, many opportunities opened up for us because of the various programs they offered.*

”

## DOMINIC P. PACLIBAR

Owner, Small Scale Dairy Processing Facility Business Module  
M'lang, North Cotabato / 48 years old

# PROFITABILITY OF ALL MODULES IN

<b>MODULE</b>	<b>Initial Investment (PHP)</b>	<b>Daily/Per cycle Net Income (PHP)</b>
5-Cow Start-up Dairy Buffalo Farm Business	779,018.58	1,407.04
10-Cow Start-up Dairy Buffalo Farm Business	1,935,910.16	2,837.33
15-Cow Start-up Dairy Buffalo Farm Business	2,314,177.54	4,692.60
20-Cow Start-up Dairy Buffalo Farm Business	3,008,600.32	3,117.00
25-Cow Start-up Dairy Buffalo Farm Business	3,634,407.00	4,227.93
50-Cow Start-up Dairy Buffalo Farm Business	7,153,355.56	12,919.26
Small-scale Dairy Processing Facility Business	7,441,992.87	3,599.22
Kardeli Meat Products Retail Business	870,910.05	1,324.64
Dairy Box One-Stop Shop Business	1,466,500.00	2,116.51
Vermicast Production Business	821,287.14	19,666.11(Monthly)
Corn Silage Production Business	1,274,000.0	125,347.88(Per Cycle)

# INDICATORS THE PORTFOLIO

NPV (PHP)	IRR (%)	Payback Period (years)	Profitability Index
890,034.65	28.57%	5.26	2.40
1,424,462.57	23.94%	6.08	1.88
3,442,615.76	32.52%	4.78	2.85
158,033.27	14.86%	7.10	1.07
460,745.64	15.98%	7.14	1.16
8,236,572.28	28.68%	5.14	2.45
1,864,074.24	22.47%	4.53	1.33
1,872,655.37	102.47%	2.13	5.68
2,478,155.15	51.67%	4.86	5.24
703,700.97	40.04%	3.81	2.30
1,289,698.20	37.35%	2.98	2.12

# DA-PCC

## available technology

**karabun**  
PCC Milky Bun

Karabun is an 80g bun that has been enhanced with nutrients from fresh carabao's milk and can provide the same nutritious value as a glass of milk. The creation of this product attempts to alleviate the alarming prevalence of malnutrition in the country, where 95 children die every day and one-third of all Filipino children are stunted. It is comparably more nutritious than common bread buns available in the market.

"Kardeli" is a premium-grade carabao meat produced from young carabao that have been expertly bred and raised. This comes in the form of premium choice cuts, gourmet sausages, and ready-to-cook meals, all of which have lower cholesterol contents for the market. This product was developed in response to the public's view that carabao meat is tough and of inferior quality because it is fed an inadequate diet and slaughtered when the animal reaches retirement age or is otherwise unproductive. Compared to cattle meat, carabao meat is said to contain more protein and minerals and fewer cholesterol and calories.





# gies

## Nyogurt

Nyogurt is a variety of yogurt made by fermenting coconut milk and carabao's milk with a yogurt culture for enhanced nutritive properties. The coconut milk contributes to improved sensory quality and flavor to the yogurt. This product was developed to compensate for the limited local supply of carabao's milk and to increase demand for coconut-based products. Since 90% of 3.4 million coconut farmers in the Philippines live below the poverty line and 99% of total milk supply are imported, more livelihood opportunities are available to the farmers of both commodities.

## Karapops

Kara Pops are bite-size milk candy balls in assortment of fruit flavors that is appealing to kids. This is an innovation of the classic Pastillas de Leche and turning it to an even more fun, fruity and exciting product. More nutritious than existing milk candies, the Kara pops has higher nutritional value from the fresh carabao's milk used. Its formulation has longer shelf life than the Pastillas de Leche and does not need refrigeration for storage. Flavors include Plain, Chocomilk, Melon, Strawberry, Mango, and Blueberry.

## A2Choice

A2 Choice is a genotyping test for A1 and A2 milk beta-casein variants using DNA marker technology for cattle and buffaloes. Through genetic testing on samples like blood, semen, or tissue, the type of milk the cow produces can be determined. This seeks to reduce the incidence of milk intolerance caused by the beta casein milk variant (A1 Milk) and to genetically select cows and breeding bulls that contain the A2 variant to generate future cows that are homozygous for the A2 genotype.

# INVENTORY OF BEST PRACTICES

## PROCESSING AREA

1

**Foot baths are available with approved disinfectant chemicals.**

*Mayroong mga foot bath na may mga aprubadong disinfectant na kemikal.*

2

**There's only one production flow from entrance to finished product exit, and there is no cross contamination.**

*Mayroon lamang isang daloy ng produksyon mula sa pasukan hanggang sa paglabas ng tapos na produkto, at walang cross contamination.*

3

**Windows and doors are in good condition; dry; no stains, dust, dirt, or cracks. Handles are clean and sanitized.**

*Ang mga bintana at pinto ay nasa mabuting kalagayan; tuyo; walang mantsa, alikabok, dumi, o bitak. Ang mga hawakan ay malinis at sanitized.*

4

**Doors are kept closed (preferably self-closing) to prevent pest entry. Windows and door screens are installed with no holes or damage.**

*Ang mga pinto ay pinananatiling nakasara (mas mainam kusa itong sasara) upang maiwasan ang pagpasok ng mga peste. Ang mga screen ng bintana at pinto ay naka-install na walang mga butas o bitak.*

5

**Exhaust fans or air conditioning units are functioning properly with no dust, cobwebs, dirt and stain.**

*Ang exhaust fan o aircon ay gumagana ng maayos na walang alikabok, sapot, dumi at mantsa.*

6

**Ceiling is in good condition and no dust, cobwebs, dirt and stain.**

*Ang kisame ay nasa mabuting kondisyon at walang alikabok, sapot, dumi at mantsa.*

7

**Lights are in good condition/functional (not busted) with shatterproof cover. No dust, cobwebs, dirt, or stains with adequate lighting.**

*Ang mga ilaw ay nasa mabuting kondisyon/functional (hindi bsag) na may takip na hindi mababasag. Walang alikabok, sapot, dumi, o mantsa na may sapat na liwanag.*

8

**Walls have no stains, molds, cobwebs or unnecessary things.**

*Ang mga dingding ay walang mantsa, amag, sapot o hindi kailangang mga bagay.*

9

**Floor is properly cleaned (no source of possible contamination), no mold, algae, dirt, or unpleasant odor. It has a rubberized floor paint and coved floor-to-wall junctions and corners.**

*Ang sahig ay maayos na nililinis (walang pinagmumulan ng posibleng kontaminasyon), walang amag, algae, dumi, o hindi kanais-nais na amoy. Mayroon itong rubberized floor paint at coved floor-to-wall junctions at corners.*



- 10** **PVC curtains (entrance and exit) are available and properly cleaned (no mold, algae, dirt, or unpleasant odor).**  
*Ang mga PVC na kurtina (pasukan at labasan) ay magagamit at maayos na nililinis (walang amag, algae, dumi, o hindi kanais-nais na amoy).*
- 11** **Drainage is in good condition, properly cleaned (no mold, algae, or dirt) and properly covered (stainless grate).**  
*Ang drainage ay nasa mabuting kondisyon, maayos na nililinis (walang amag, algae, o dumi) at maayos na natatakpan (stainless grate).*
- 12** **Processing area is properly cleaned (no mold, algae, dirt, or unpleasant odor), properly labeled (name of machines, warning/caution), and no unnecessary items.**  
*Ang Processing Area ay wastong nililinis (walang amag, algae, dumi, o hindi kanais-nais na amoy), properly labled (pangalan ng mga makina, babala/pag-iingat), at walang mga hindi kinakailangang bagay.*
- 13** **Uncooked materials and processed products must be separated to avoid contamination. Processed products must be kept covered at all times.**  
*Ang mga hilaw na sangkap at mga naprosesong produkto ay dapat na paghiwalayin upang maiwasan ang kontaminasyon. Ang mga naprosesong produkto ay dapat nakatakip sa lahat ng oras.*
- 14** **Circuit panel can be accessed easily, always closed and free from any clutter (wirings).**  
*Madaling ma-access ang circuit panel, laging nakasara at walang anumang kalat (mga kable).*
- 15** **Good Manufacturing Practices (GMP) signage and labels (Area/Room Identification, No Smoking, Fire Exit) are available.**  
*Mayroong GMP signage at mga label (Area/Room Identification, No Smoking, Fire Exit)*
- 16** **Working tables must be made of stainless-grade material (SS 304 or 316), in good condition, properly cleaned (no mold, algae, or dirt), and have no unnecessary items present.**  
*Ang mga working table ay dapat na gawa sa hindi kinakalawang na materyal (SS 304 o 316), nasa mabuting kondisyon, maayos na nililinis (walang amag, algae, o dumi), at walang mga hindi kinakailangang bagay.*
- 17** **Freezer/storage of finished goods is in good condition, functional and in-use, and cleaned (no rust, mold, algae, dirt, or unpleasant odor).**  
*Ang freezer/storage ng mga natapos na produkto ay nasa mabuting kondisyon, gumagana at ginagamit, at nililinis (walang kalawang, amag, algae, dumi, o hindi kanais-nais na amoy).*
- 18** **The temperature display or thermometer of the refrigerators or freezers are available and in good condition.**  
*Nakikita at nasa mabuting kondisyon ang mga pangkuha ng temperatura o thermometer ng mga refrigerator o freezer.*
- 19** **Equipment has no missing or loosely attached parts and is properly labeled.**  
*Ang mga kagamitan ay walang nawawala o maluwag na mga bahagi at may wastong label or marka.*

# INVENTORY OF BEST PRACTICE

## RECORDS

**1**

**Production manuals are readily available to staff.**

*Ang mga manwal tungkol sa produksyon ay madaling naaccess ng mga empleyado.*

**2**

**Logbooks and reports are updated and filed properly.**

*Ang mga logbook at reports ay ina-update at nai-file nang maayos.*

- Inventory Records
- Cleaning Monitoring Records
- Preventive Maintenance/Annual Calibration Reports (Freezers, Thermometers, Weighing Scales)
- Production Logbook
- Pest Control Logbook
- Annual Health Certificates
- Milk Quality Testing Records

**3**

**Licenses are updated and filed/displayed properly.**

*Ang mga lisensya ay ina-update at naihain/ipinapakita nang maayos.*

- Business Permit
- Sanitary Permit
- FDA License to Operate (if available)
- CDA Certificate of Registration
- NDA License to Operate (if available)
- BIR Registration



## PERSONNEL HYGIENE

- 1** Staff have clean hands and gloves, clothing (clean apron, scrub suit), face mask, head cap, socks and proper footwear.

*Ang mga empleyado ay may malinis na kamay at guwantes, damit (malinis na apron, scrub suit), face mask, head cap, medyas at wastong kasuotan sa paa.*
- 2** Personnel wear gloves when handling foods and utensils.

*Ang mga tauhan ay nagsusuot ng guwantes kapag humahawak ng mga pagkain at kagamitan.*
- 3** Staff have trimmed fingernails and no nail polish, a shaved mustache, and properly groomed hair.

*Ang mga empleyado ay regular na nag-gugupit ng mga kuko at walang nail polish, walang bigote, at regular na nagpapagupit ng buhok (para sa mga lalaki).*
- 4** All jewelry is removed/covered properly before starting work/handling food.

*Ang lahat ng alahas ay tinanggal/tinatakpan nang maayos bago simulan ang trabaho/paghawak ng pagkain.*
- 5** Eating and storing food in designated areas only.

*Ang pagkain at pag-iimbak ng pagkain ay marapat na nasa itinalagang lugar lamang.*
- 6** All staff have no cuts, boils, burns, or other contagious illnesses while handling food.

*Ang mga empleyado ay walang sugat, pigsa, paso, o iba pang nakakahawang sakit habang humahawak ng pagkain.*
- 7** No picking of the nose, mouth, or ears in the processing area.

*Bawal ang paghawak sa ilong, bibig, o tainga sa processing area.*
- 8** All hands and arms are sanitized before entering the production area.

*Malinis ang mga kamay at braso bago pumasok sa production area.*
- 9** No smoking, spitting, or tobacco chewing in the processing and storage area.

*Bawal manigarilyo, dumura, o ngumuya ng tabako sa processing area at storage area.*

# INVENTORY OF BEST PRACTICES

## OTHERS

- 1** **The hand washing area has available soap, sanitizer, potable water, and a poster of "How to wash your hands properly" is displayed. Handwashing sinks are preferably foot-operated.**  
*Ang lugar para sa paghuhugas ng kamay ay may sabon, sanitizer, naiinom na tubig, at may naka-paskil na poster ng "Tamang Paghuhugas ng Kamay". Ang mga lababo sa paghuhugas ng kamay ay mas mainam na foot-operated.*
- 2** **Hand washing area is cleaned; no stains, dust, dirt, cracks, or unnecessary items.**  
*Nililinis ang lugar kung saan naghuhugas ng kamay; walang mantsa, alikabok, dumi, bitak, o hindi kailangang mga bagay.*
- 3** **Crates/pallets are in good condition, made of plastic material, and color coded per area (Finished Product, Raw Material, etc.). It is regularly cleaned (no stains, dust, dirt, or cracks).**  
*Ang mga crates/pallet ay nasa mabuting kondisyon, gawa sa plastic na materyal, at color coded bawat lugar (Tapos na Produkto, mga sangkap, atbp.). Ito ay regular na nililinis (walang mantsa, alikabok, dumi, o bitak).*
- 4** **Weighing scale has no stains, molds, or accumulated dirt. Preferably digital weighing scale and must be calibrated annually.**  
*Ang weighing scale ay walang mantsa, amag, o naipon na dumi. Mas mainam na digital weighing scale at dapat i-calibrate ito taun-taon.*
- 5** **There is a specified area for the weighing scale and it is properly labeled.**  
*Mayroong angkop na lugar para sa weighing scale at ito ay wastong may label.*
- 6** **Changing room is properly cleaned and maintained (no dust, cobwebs, dirt, or stains) and no unnecessary items present. It must have cabinets/lockers, a whole body mirror, and a poster displayed for proper PPE and proper hygiene.**  
*Ang silid kung saan maaaring magpalit ay maayos at pinapanatiling malinis (walang alikabok, sapot ng gagamba, dumi, o mantsa) at walang mga hindi kinakailangang bagay. Dapat ito ay may mga cabinet/locker, isang salaming pang buong katawan, at isang poster na naka-display para sa tamang PPE at tamang kalinisan.*
- 7** **Stock room for chemicals and cleaning materials is properly cleaned and maintained (no mold, algae, dirt, unpleasant odor, unnecessary items, and no source of possible contamination). Chemicals and cleaning materials are separately stored from the food products, properly labeled and secured with a lock.**  
*Ang stock room para sa mga kemikal at mga materyales sa paglilinis ay maayos na nililinis at pinapanatili (walang amag, algae, dumi, hindi kanais-nais na amoy, hindi kinakailangang mga bagay, at walang pinagmumulan ng posibleng kontaminasyon). Ang mga kemikal at panlilis na materyales ay hiwalay na iniimbak mula sa mga produktong pagkain, na may wastong label at sinigurdang may lock.*
- 8** **Laboratory/testing area for milk is properly cleaned and maintained (no mold, algae, dirt, unpleasant odor, unnecessary items, and no source of possible contamination).**  
*Ang laboratory/testing area para sa gatas ay wastong nililinis at pinapanatili (walang amag, algae, dumi, hindi kanais-nais na amoy, hindi kinakailangang mga bagay, at walang pinagmumulan ng posibleng kontaminasyon).*



**9** Water system facility is in good condition, functional, and properly cleaned (no mold, algae, or dirt).  
*Ang pasilidad ng water system ay nasa mabuting kondisyon, gumagana, at maayos na nililinis (walang amag, algae, o dumi).*

**10** Raw materials room is in good condition (well-ventilated and with adequate lighting), properly cleaned (no cobwebs, pests or insects, molds, algae, and dirt), and no unnecessary items.  
*Ang silid ng mga hilaw na sangkap ay nasa mabuting kondisyon (well-ventilated at may sapat na ilaw), maayos na nililinis (walang mga sapot ng gagamba, peste o insekto, amag, algae, at dumi), at walang mga hindi kinakailangang bagay.*

**11** Raw materials must be stacked and labeled properly, and First Expired, First Out (FEFO) is used. When not in use, raw materials must be closed or sealed properly.  
*Ang mga hilaw na sangkap ay dapat na nakasalansan at may label nang maayos, at ang First Expired, First Out (FEFO) ay ginagamit. Kapag hindi ginagamit, ang mga hilaw na sangkap ay dapat na sarado o selyadong maayos.*

**12** Packaging room is in good condition, properly cleaned (no cobwebs, pests/insects, molds, algae, and dirt), and has no unnecessary items.  
*Ang packaging room ay nasa mabuting kondisyon, maayos na nililinis (walang mga sapot ng gagamba, peste/ insekto, amag, algae, at dumi), at walang mga hindi kinakailangang bagay.*

**13** Comfort room is in good condition, properly cleaned (no cobwebs, molds, algae, or dirt) with soap and sanitizer available, no unnecessary items, and must be outside of the processing area.  
*Ang palikuran ay nasa mabuting kondisyon, maayos na nililinis (walang mga sapot ng gagamba, amag, algae, o dumi) may available na sabon at sanitizer, walang mga hindi kinakailangang bagay, at dapat nasa labas ng processing area.*

**14** Loading/Unloading Area is properly cleaned; no unnecessary items; and proper signage is in place  
*Ang Loading/Unloading Area ay wastong nililinis; walang mga hindi kinakailangang bagay; at maayos na signage ay nasa lugar.*

**15** Water canals (outside) are in good condition, properly cleaned and no visible dirt (e.g., cigarettes). It must have a screen to cover the wastewater exit.  
*Ang mga kanal ng tubig (sa labas) ay nasa mabuting kondisyon, maayos na nililinis at walang nakikitang dumi (hal., mga sigarilyo). Dapat itong may screen upang masala ang labasan ng wastewater.*

**16** Trash bins are properly maintained, labeled, and covered. (Biodegradable, Non-Biodegradable, Recyclable, Hazardous, if applicable)  
*Ang mga basurahan ay maayos na pinananatili, may label, at natatakpan. (Nabubulok, Di-nabubulok, May silbi, mapanganib)*

**17** No pest infestation, traces of pest and stray animals.  
*Walang paglusob ng peste, bakas ng peste at mga ligaw na hayop.*

## BUSINESS TERMS

**Annual Net Cash Flow** refers to the difference between cash inflows and outflows of the business in a year.

**Capital Investment** refers to money invested in a business with the understanding that the money will be used to purchase fixed assets, rather than used to cover the business's day-to-day operating expenses.

**Direct Labor** includes the salaries paid and other benefits such as meals and bonuses provided for farm workers.

**Direct Material** includes feeds, forages, legumes, vitamins, and supplements which are directly involved in maintaining each animal.

**Earnings after Interest** refers to the income derived from the investment after deducting the interest expense of the credit financing.

**Farm Net Income/ Net Loss** is the total return after deducting all expenses incurred during the period.

**Hurdle Rate** is the minimum rate of return on a project or investment required by a manager or investor. The hurdle rate denotes appropriate compensation for the level of risk present; riskier projects generally have higher hurdle rates than those that are deemed to be less risky.

**Inflation Rate** is the rate at which the general level of prices for goods and services is rising and, consequently, the purchasing power of currency is falling.

**Interest Expense** is a non-operating expense which represents interest payable on any borrowings – bonds, loans, convertible debt or lines of credit.

**Interest Payment** refers to the payment amount determined by the interest rate on an account.

**Interest Rate** is the amount charged, expressed as a percentage of principal, by a lender to a borrower for the use of assets.

**Internal Rate of Return (IRR)** is a metric used in capital budgeting measuring the profitability of potential investments. Internal rate of return is a discount rate that makes the net present value (NPV) of all cash flows from a particular project equal to zero.

**Loan Amortization Schedule** is used to determine loan amortization payments and the allocation of each payment to interest and principal.

**Meat Revenue** represents the amount received by selling the animals either for slaughter or for raising purposes.

**Net Present Value (NPV)** is the difference between the present value of cash inflows and the present value of cash outflows. NPV is used in capital budgeting to analyze the profitability of a projected investment or project. It is computed by discounting annual cash flow using a hurdle rate of 16 %.

**Other Revenues** is maintained to account for the sale of various farm by-products like manure, used sacks, etc.

**Overhead Expense** are expenses related to maintaining the farm but are not classified as direct materials and direct labor.

**Payback Period** is the amount of time it takes for a project's cumulative net cash inflows to recoup the initial investment.

**Present Value of Cash flow** refers to the value today of a cash flow to be received at a specific date in the future, accounting for the opportunity to earn interest at a specified rate.

**Principal Payment** is a payment toward the amount of principal owed.

**Profitability Index** is capital budgeting tool, defined as the present value of a project's cash inflows divided by the absolute value of its initial cash outflow.



# OF TERMS

**Projected Cash Flow** shows the expected amounts of money that will come into a business along with what will go out as expenses.

**Projected Income Statement** is a projection schedule that looks at the money the business will gain over a specific period, normally one year, minus anticipated expenses for that period.

**Property, Plant and Equipment** is a summation of all a company's purchases of property, manufacturing plants and pieces of equipment to that point in time, less any amortization.

**Raw Milk Sales** is the total milk revenue received from selling the milk produced by the cows.

**Return on Investment** is measure of a firm's overall effectiveness in using its assets to generate returns to common stockholders.

**Selling and Admin Expense** are costs incurred for marketing and distribution of the milk; managing and record keeping of the farm.

**Total Expense** covers all the expenses incurred to operate and maintain the farm. This includes Direct Material, Direct Labor, and Overhead.

**Total Farm Revenues** is the summation of all revenue items including milk, meat, manure, other revenue, and Unrealized Gain on Change in FV of Biological Assets. Total Initial Investment is the total amount required to start a business.

**Unrealized Gain or Change in FV of Biological Asset** is in compliance with Philippine Accounting Standards 41 entitled Agriculture, the increase or decrease in total value of herd is estimated at year-end and is treated as other non-cash income.

**Working Capital** refers to the capital of a business that is used in its day-to-day trading operations, calculated as the current assets minus the current liabilities.

## DAIRY BUFFALO FARM MANAGEMENT TERMS

**Breedable Female** is any mature female carabao that is ready for breeding.

**Breeding Stocks** is a group of carabao used for the purpose of planned breeding. This includes heifer and cow

**Bull** is a breeding male carabao aged 2 years old and above.

**Calf** is a young carabao of either sex and below 1 year of age.

**Calving** is the act of giving birth.

**Calving Interval** refers to the period of time between two successive calving. The shorter the calving interval, the higher is the reproductive efficiency of the farm. The ideal calving interval in a dairy buffalo farm is a minimum of 380 days and a maximum of 410 days. This is broken down into 320 days gestation period and 60-90 days service period.

**Cow** is a mature female carabao that has already given birth.

**Gestation Period** also known as gestation length. It is the duration from the time of fertilization until parturition (calving), which on the average is 320 days (310-330 days) and 312 days (295-320 days) for the swamp and dairy buffalo types, respectively.

**Heifer** is a female carabao aged 2 years and above that has not yet given birth.

**Lactation Days** also known as lactation period. Refers to the period of milk production and suckling. The latter condition is eliminated in dairy farms when the calf is immediately weaned from the dam right after calving. The average length of lactation in dairy buffaloes in DA-PCC herds is 265 days, which ranges from 200-359 days.

**Parity** refers to the number of times a dam has given birth.

**Yearling** is a young carabao of either sex and aged one-year-old to 2 years old.

## **ZADIESHAR G. SANCHEZ**

### **Project Development Officer V Chief, Planning and Information Management Division**

Mr. Zadieshar G. Sanchez took his BS Accountancy degree from Central Luzon State University and became a Certified Public Accountant in 2012. He earned his master's degree in Agricultural Economics minor in Environmental Science at the University of the Philippines Los Baños in 2022. He entered DA-PCC in 2014 and assisted in the establishment of the newly created Business Development and Commercialization Unit under the Planning and Special Projects Division. He was tasked to develop various financial reporting systems, monitoring dashboards, and assisted in the creation of several business models and technology economic valuations which are now being used or adopted by the stakeholders. He also established the DA-PCC's Internal Audit Section in 2016 where internal controls were assessed and installed agency-wide to ensure assets are safeguarded, financial reports are accurate and reliable, laws are followed, managerial policies are complied with, and most importantly, to evaluate value-for-money by ensuring that operations are efficient, effective, economical, and ethical. He was the lead author of the prototype publication of the Carabao Business Portfolio. He also concurrently serves the agency as the OIC-Chief of the Administrative and Financial Management Division where systems, manuals, and new programs are being developed.

## **JAN CZARINA M. SALAS**

### **Former Project Evaluation Officer III**

Jan Czarina M. Salas worked as Project Evaluation Officer III under the Planning and Information Management Division of DA-PCC. She was part of the pioneering team of staff that launched the Business Development and Commercialization unit under the said division, which trailblazed the provision of business workshops, and the creation of business models, dashboards, and operations guidelines for cooperatives and dairy entrepreneurs. She spearheaded the implementation of the Dairy Box program strategy wherein cooperative operators are provided with marketing assistance to advocate standard operations and quality dairy buffalo products. She is currently studying Master's in Business Administration while also being an entrepreneur, and a professional illustrator and graphic designer.

## **JOSHUA G. VILLANUEVA**

### **Accountant II**

Joshua G. Villanueva used to work as Financial Analyst under the Business Development and Commercialization Unit of the DA-Philippine Carabao Center. He is a Certified Public Accountant and currently studying for his Master's in Business Administration at Central Luzon State University. He provided business financial analyses, created various business models, organized business training, developed monitoring dashboards, and gave business assistance to clients. He was the point person for the available government loan programs available for carabao industry players. He also worked as an accountant at Philippine Rice Research Institute. He now handles the monitoring and coordination of the 500-Million PL480 Project entitled "Intensified Community-based Dairy Enterprise Build-Up", develops performance-based budgeting of the agency, and collects data for the Carabao Industry Fact Sheet/Outlook. He was recently appointed as an Accountant II of DA-PCC.

## **ANGELIQUE ANLOCOTAN-OREJANA**

### **Former Business Development Analyst**

Ms. Angeliqe Anlocotan-Orejana is a graduate of BS in Business Administration major in Economics at Central Luzon State University and has units in Masters of Science in Economics from Polytechnic University of the Philippines prior moving to New Zealand in 2022. She worked as Business Development Analyst under the Planning and Information Management Division from 2016 to 2019. She was one of the brains of Business Development and Commercialization Unit who developed financial monitoring tools now coined as "Dashboards". She spearheaded the development of Strategic Performance Management System (SPMS) Dashboard, and she facilitated the implementation of 6 Value Chain Projects across the country. Currently, she is working as Operations Administrator of Alliance Group Limited in New Zealand, overseeing the export shipments of the company.

# PROFILE

## **PAULINE A. MARAMAG**

### **Project Evaluation Officer II Head, Monitoring and Business Planning Support Section**

Ms. Pauline A. Maramag is a Certified Public Accountant since 2018 who took her BS in Accountancy degree at Central Luzon State University and is currently taking up her Master of Business Administration degree at the same university. She started as a Financial Analyst and was promoted to Science Research Specialist II in the Business Development and Commercialization Unit (now Monitoring and Business Planning Support Section) who is responsible for the regular audit and monitoring of the production and business dashboards of the clients and agency's national headquarters and 12 regional centers, crafting of business plans, financial projections, feasibility studies, and profitability analysis for investment portfolios and industry proposals, technology valuation for commercialization, and the writing and conduct of researches. She led the launching of the Youth Development Program to prepare the second liners in Carabao entrepreneurship. She currently leads the MBPSS with both agency performance monitoring and client business planning tasks and initiatives.

## **QUEENIE B. RUIZ**

### **Science Research Specialist II**

Queenie B. Ruiz obtained her Bachelor of Science in Accounting Technology from Central Luzon State University in 2015, and her Bachelor of Science in Accountancy from Dr. Gloria D. Lacson Foundation Colleges Inc. in 2017, the same year that she passed the CPA Licensure Exam. She previously held the position of branch head in a real estate corporation for almost four years, where she was in charge of overseeing the day-to-day operations of the company. She now worked as a Science Research Specialist II at the Monitoring and Business Planning Support Section, where her responsibilities include creating investment portfolios, conducting financial performance analyses, and auditing DA-PCC Institutional Herds, Processing and Marketing Outlets, and DA-PCC Clients along the Value Chain.

## **GISELLE M. SACUPASO**

### **Financial Analyst I**

Giselle M. Sacupasos is a Financial Analyst at the Monitoring and Business Planning Support Section under the Planning and Information Management Division of DA-PCC. She is a graduate of BS Accounting Technology at Central Luzon State University and took BS Accountancy at Dr. Gloria D. Lacson Foundation Colleges, Inc. She was assigned to monitor the Processing and Marketing Outlet (PMO) Dashboard of DA-PCC Regional Centers and visited different dairy boxes and client PMOs across the country to audit their stores and processing facilities. She is also responsible for auditing their financial statements. She also helps the Internal Audit Section in auditing the DA-PCC Regional Centers as well as the center's Institutional Herds and PMOs.

## **ERICKA JOYCE L. MALLARI**

### **Former Internal Auditor I**

Ericka Joyce L. Mallari is a graduate of BS Mathematics major in Business Application at Bulacan State University. She is worked as an internal auditor in the Internal Audit Section. Part of her work is to perform a value-for-money audit of DA-PCC's 12 regional centers, including the Institutional Herd and Processing and Manufacturing Outlet. She also assists the Business Development and Commercialization Unit (now Monitoring and Business Planning Support Section) in auditing the DA-PCC-managed cooperatives' dairy boxes, processing, and manufacturing facilities.

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# GOT QUESTIONS OR SUGGESTIONS?

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 DA-Philippine Carabao Center

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