Central Luzon DAIRY Industry Situationer

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Table Contents

Executive Summary		1
I.	**Introduction**	2
II.	**The Central Luzon Dairy Industry**	3
III.	**Profile of the Industry**	3
	Market Access	4
	Capacity Utilization	4
IV.	**Situation Analysis**	7
	A. Role of the Dairy Industry in Economic Development	7
	Contribution to Employment and Income	8
	B. Analysis of the Industry's Strengths, Weaknesses, Opportunities and Threats (SWOT)	8
	Strengths	8
	Weaknesses	9
	Opportunities	9
	Threats	9
	C. Industry Situation in the Region/Province	10
	D. Issues and Challenges Facing the Industry	10
	1. Dairy Cooperative	10
	2. Consolidator	10
	3. Farmer-participants	10
	4. Processors	10
	E. Prospects & Opportunities	10
	F. Proposed Strategies for the Development of the Industry (Action Plan of the Steering Body)	11
	Dairy Carabao Industry Cluster – Organizational Chart	18
	Appendix I Directory of MSMEs Surveyed	20
	Appendix II Numbers of Carabaos, Female Breeders, By Farm Type, And According to Municipality	24
	List of References	27

List of Tables

Table No.	Title	Page No.
Table 1	Number and Types of Dairy Firms in Central Luzon	3
Table 2	Dairy Processors According to Products, Capacity and Asset Size	4-7
Table 3	Job Classification of Workers in the Industry	8
Table 4	Action Plan	11-12
Table 5	Bottomline Targets CY 2012-2016 Dairy Industry	13
Table 6	Value Chain Analysis	13
Table 7	Upgrading Action Plan	16-17
Table 8	Industry Cluster Facilitation Plan (Action Plan of the Steering Body)	19

List of Figures

Figure No.	Title	Page No.
Figure 1	Value Chain Map	15

Regional Industry Situationer
On the
Dairy Industry
Region 3

Executive Summary

The Regional Industry Situationer focuses on the current status, potentials and challenges of the Dairy Carabao Industry in Central Luzon. It mentions the total production in the entire country and the amount of imports needed to supply the requirements of the Filipino people, and how the different national agencies and other industry sectors have helped to develop the industry. The number of firms and their contribution to employment are also included and presented per province.

The introduction explains the objectives of the situationer and why the dairy industry is made part of 14 Priority Industry Clusters in the country. The role of the dairy industry in economic development-in particular its contribution to improving the living conditions of the farmers, is one of the major highlights of this report.

Through the Dairy Work Plan, the Department of Trade and Industry strategizes on the needed intervention to pursue development: the strengths, weaknesses, opportunities and threats (SWOT), the issues and challenges, the potentials and prospectsall serve as bases for future planning.

Various strategies are recommended to address the weaknesses and threats, especially regarding processed dairy products. These are the Cluster-based Development Program, the use of the Value Chain Analysis as a planning tool, implementation of the National Dairy Development Act, harmonizing dairy development assistance from local and national government and the private sector, and organization of the Central Luzon Dairy Industry Cluster Team.

Central Luzon's Dairy Industry's objectives is to focus on carabao's milk and to increase the production growth rate to 10% yearly by 2013-2016 since this is the only milk product abundant in the five provinces namely: Bulacan, Pampanga, Tarlac, Nueva Ecija and Zambales.

I. Introduction

In 2012, the Department of Trade and Industry adopted the **industry clustering approach** as part of its business development strategy for micro, small and medium enterprises. It is an effective approach where said businesses within a value chain compete, collaborate and depend on each other at the same time towards developing the industry.

It must be noted that despite continuing government and industry efforts to increase dairy production, Philippine milk production remains at less than one percent of the country's total dairy requirements, with imports filling most of the supply. However, such importation is expected to slow down due to continuing high world prices.

The Philippines, with an estimated population of 92.3 million, and growing annually at 2.36 percent, is a large market for milk and milk products. The industry ought to take advantage of this huge market potential. Dairy products are the country's second largest agricultural import after wheat. The country's dairy industry, which sources 99 percent of its inputs from abroad, is estimated to generate sales of up to $1 billion annually. The Philippines is now the 3rd largest market for U.S. dairy products, after Mexico and Canada. Total dairy imports last year reached $152 million, up nearly 58 percent from 2006. The top US dairy exports to the Philippines in 2007 were: non-fat dry milk powder ($100 million), whey ($23 million) and cheese ($4.3 million).

The Department of Agriculture with its attached agencies, the Philippine Carabao Center (PCC) and the National Dairy Authority (NDA), continues to prioritize the development of the dairy industry. *Despite the growing demand for fresh milk by specialty coffee shops and by hotels and restaurants, as well as by the local government units for their milk feeding programs, the national government knows that the local dairy industry cannot compete in the powdered milk market.* In order to compete with the global market and cut down our imports, the fresh milk sector should increase production to be able to supply the growing demand of the Filipino consumers. When maximum production capacity required is achieved, the country may be able to produce milk into powdered form to issues on perishability. By producing milk in powdered form, there will be more value adding benefits for the small dairy farmholders.

II. The Central Luzon Dairy Industry

In Central Luzon, only the provinces of Bulacan, Pampanga,NuevaEcija, Tarlac and Zambales have enrolled in this priority industry. This is because these provinces have the most number of carabao's milk processors. According to the National Satatistics, Office there are 175, 531 heads of carabaos. (See appendix II)These figures shows only show that the projected annual growth rate of 10% is attainable. At present, the Department of Trade and Industry in region III is directly assisting 38 primary cooperatives who are engaged in milk production, 64 micro entrepreneurs and one secondary cooperative that manufacture different processed milk products.

Table 1
Number and Types of Dairy Firms in Central Luzon

Province	Producer	Processor	Total
Bulacan		2	2
Pampanga	2	6	8
Nueva Ecija	36	6	42
Tarlac Zambales		9 41	9 41
Total	38	64	102

III. Profile of the Industry

The milk-producing sector consists of an informal group of individual unorganized producers and a formal sector that has three distinct groups defined by the numbers of their milk animals: 1) smallholder producers with 1 to 10 heads of animals, 2) those with over 20 to 75 heads, and 3) producer-processors that maintain farms, operate a milk pasteurizing plant and undertake marketing of milk in urban centers, with about 100 milk animals or more. In all cases, the producer-processors also procure raw milk from smallholders. The Philippine milk-producing sector may be characterized, on the whole, as a smallholder-based sector.

Milk from carabaos is usually manufactured into the various dairy products. Majority of the firms have been operating for more than 10 years and majority of these are cooperatives registered with the Cooperative Development Authority. Cooperatives are categorized into primary, secondary and tertiary cooperatives. Most of the primary cooperatives belong to the micro sector, while the secondary and tertiary level cooperatives are classified as small industries. Primary cooperatives are cooperatives whose members are natural persons of legal age. Secondary cooperatives are cooperatives whose members are primary cooperatives. Tertiary cooperatives are cooperatives whose members are the secondary. Majority of micro-processors employ two to three people. To facilitate milk consolidation, processing and marketing, a secondary cooperative is tapped to serve as the consolidator and processor of the milk being produce by the primary cooperatives.

Oftentimes, those who lead the cooperatives are high school graduates. Their leadership skills are acquired on the job and through constant participation in capability-enhancement trainings and seminars.

Market Access

Markets for fresh milk are the micro-processors within the area and local government units (LGUs) engaged in the milk feeding program of young children conducted by the Department of Social Welfare and Development. Cooperatives with the necessary skills in processing manage to utilize surplus production into sweets and delicacies. Raw materials like milk, sugar and flavouring are available in the local market. The market for processed dairy includes schools, pasalubong centers, restaurants and hotels.

Capacity Utilization

Milk production is at its peak from July to September. Due to the small number of processors, excess production is sold to nearby provinces. Despite this, a large quantity of milk tends to spoil. The table below shows the different processors in Central Luzon with their products and capacity.

Table 2
Dairy Processors According to Products, Capacity and Asset Size

Province	Company	Products	Production Capacity	Asset Size
Bulacan	Sta. Maria Dairy Farmers MPCI	Yoghurt, KesongPuti	700liters/day	500-1.500
	Kalamilk Soap Enterprises	Soap	500 bars/month	Below 500
Pampanga	MapińaCarabao Raisers Association	Pastillas, Choco Milk	40L/day	5,000-10,000
	Mapińa Farmers Irrigators Association (MFIA)	Pastillas, Choco Milk	120 boxes/20liters a day/48 pcs	Below 100,000
	Mapińa*Negosyo King Panyulung* Program (NPP) Association	Pastillas, Choco Milk		Below 100,000
	Green Meadows Dairy Products	Choco Milk	100 kilos	Below 100,000
	Pabalan Delicacies	Sweets and Delicacies		Below 100,000
	Carreon's Sweets and Pastries	Sweets and Delicacies		Below 100,000

Province	Company	Products	Production Capacity	Asset Size
Nueva Ecija	NEFEDCCO	Pastillas, Choco Milk, Cheese,	1,500 Liters of GatasngKalabaw per day	Above 10M
	DVF Dairy Farm Inc.	Pastillas, Choco Milk, Cheese	2,500 liters/day – full blast Existing: 800 – 1,000 liters/day	Above 10M
	C &C Food Products	Pastillas, kesongputi, Parmesan Cheese	Temporarily stopped operation due to personal concerns of the owner	5M-10M
	San Jose Cara Milk	Pastillas, KesongPuti, Flavored Milk, Lechetin. Pasteurized Milk	150 packs per day	Below 5,000.000.00
	Ayin's	Pastillas, Yema	100 packs per day	300,000.00
	Celings	Pastilas, Yema	150 packs per day	350,000.00
Tarlac	Mountain Goat Farm	Goat's milk, cheese, milk pastillas, yougart, ice cream, goat's meat	50-80 liters per day	Below 100,000
	JSJ Goat Farm	Goat's milk, cheese, pesto, milk pastillas, goat's meat, breeders	50-80 liters per day	Below 100,000
	Farm View Breeders	Goat's milk, cheese, milk pastillas, yougart, ice cream, goat's meat	50-80 liters per day	Below 100,000
	Isabel Farms	Goat's milk, cheese, milk pastillas, yougart, ice cream, goat's meat	50 liters per day	Below 100,000
	Ebenezer Zoe Goat Farm	Goat's milk, cheese, milk pastillas, yougart, ice cream, goat's meat	50 liters per day	Below 100,000
	Riso Farm	Goat's milk, cheese, milk pastillas, yougart, ice cream, goat's	80 liters per day	Below 100,000

Province	Company	Products	Production Capacity	Asset Size
		meat		
	Tanedo's Farm	Goat's milk, cheese, milk pastillas, yougart, ice cream, goat's meat	50 liters per day	Below 100,000
	MARC-AGRO	Goat's milk, cheese, milk pastillas, yougart, ice cream, goat's meat	50-80 liters per day	Below 100,000
	Yetten Boers	Goat's milk, cheese, milk pastillas, yougart, ice cream, goat's meat	50-80 liters per day	Below 100,000
Zambales	Abagas' Pastillas*	Pastillas		Below 100,000
	AgbulosPastillas*	Pastillas		-do-
	Asiatico'sPastillas*	Pastillas		-do-
	Bryan Pastillas	Pastillas		Below 100,000
	Bulawen Dairy MPCI	Pastillas		Below 100,000
	CalimlimPastillas	Pastllas		-do-
	Delia's Pastillas*	Pastillas		-do-
	Ebuen'sPastillas*	Pastillas		-do-
	Edeliana'sPastillas	Pastillas		-do-
	Elsie's Pastillas*	Pastillas		Below 100,000
	Enriquez Pastillas	Pastillas		Below 100,000
	Flory's Pastillas	Pastillas		Below 100,000
	Grace Pastillas*	Pastillas		-do-
	Ibang-IbaPastillas	Pastillas		-do-
	Jiellian'sPastillas	Pastillas		-do-

Province	Company	Products	Production Capacity	Asset Size
	Juliet's Pastillas	Pastillas		-do-
	Kim's Pastillas	Pastillas		Below 100,000
	Lady Pastillas	Pastillas		Below 100,000
	Linda's Pastillas*	Pastillas		Below 100,000
	Luisa Miclat'sPastillas	Pastillas		Below 100,000
	Merla'sPastillas*	Pastillas		Below 100,000
	MiclatPastillas*	Pastillas		Below 100,000
	NCY Pastillas	Pastillas		Below 100,000
	Odan/Rosita's Pastillas*	Pastillas		Below 100,000
	Ortiz Pastillas*	Pastillas		-do-
	Palauig Pastillas Producer's Coop. Inc.	Pastillas		-do-
	Purita'sPastillas*	Pastillas		Below 100,000
	Quinones Pastillas*	Pastillas		-do-
	Raissa'sPastillas	Pastillas		-do-
	Rica's Pastillas*	Pastillas		-do-
	Roldan's Pastillas *	Pastillas		-do-
	Rosed Pastillas	Pastillas		-do-
	Roslyn Pastillas*	Pastillas		-do-
	Sylvia Miclat Pastillas*	Pastillas		Below 100,00
	Teresita's Pastillas	Pastillas		-do-
	Zarmie's Pastillas	Pastillas		-do-
	ZMKI	Pastillas		-do-

IV. Situation Analysis

A. Role of the Dairy Industry in Economic Development

Dairy is emerging as a driving force of rural development. Its twin roles of improving the living conditions of dairy farmers and cooperatives and that of improving the health and nutrition of young school children have made a landmark in creating and securing rural jobs. Dairy cooperatives are assured of daily cash flows that make them financially secure and able to meet their families' basic needs.

Two distinct sectors make up the Philippine milk industry: a huge importing and processing sector that supplies over 95% of the milk requirements of the country and a small milk producing sector that provides the rest of the supply. About 80% of imported milk is in powdered form. In terms of liquid milk equivalent (LME), the local supply does not exceed one percent.

The dairy industry positively contributes to changes in the agricultural landscape of Central Luzon. It is effectively integrated with the rice-based cropping system.

Contribution to Employment and Income

Each village-based dairy buffalo cooperative produces milk, which serves as source of daily cash income for farmer-members and the added bonus of supplying nutritious food for their families and the community. These enterprises are located in contiguous communities for ease and efficiency of milk collection and processing. Each lactating buffalo is found to contribute an average income of P44,833.00 per month.

Table 3
Job Classification of Workers in the Industry

Job Classification	Number
Dairy farmers/families	1,300
Bull caretakers	62
Milk collectors and Delivery men	25
Milk processors	64
Office workers, clerks, bookkeepers	26
Vet Aides	35
Village-based Artificial Insemination technician	20
Total	**1,498**

B. Analysis of the Industry's Strengths, Weaknesses, Opportunities and Threats (SWOT)

Strengths

- Available support programs from the national government
- Active intervention of the National Dairy Authority, Livestock Development Council and the Philippine Carabao Center.
- Presence of a National Dairy Development Plan
- Presence of skilled workforce, which is advantageous to investors with limited capital outlay funds.
- Growth of the livestock sector
- Increasing number of dairy animals
- Presence of the National Dairy Development Act or RA 7884 which ensures the accelerated growth of the dairy industry through policy implementation and program direction.
- Available fiscal and non-fiscal incentives.
- Secure income and employment for farmers' families
- Steady supply of nutritious beverage to the community

Weaknesses

- High perishability of milk and thus, much wastage
- Low production capacity
- No FDA license of processed milk products
- High competition from imported milk products
- Lack of critical post-production facilities
- Conservative promotional strategies for buffalo milk products
- Lack of market outlet for fresh and processed milk products
- Lack of know-how, technology and facilities for bigger and better milk production, collection and processing
- Lack of diversification in products

Opportunities

- Growing demand from consumers
- Ready market like coffee shops, restaurants, hotels
- Growing awareness of consumers on specialty coffee; the improving image of coffee will help sustain the market for milk.
- Available technology for dairy farmers
- Various market development and promotion activities offered by the local and national government.
- Huge untapped national and even international market.

Threats

- Uncontrolled selling of dairy animals by farmer-beneficiaries
- Animal pests and diseases
- Long-standing strong competition from imports
- Artificial Insemination (AI) Technicians are not pro-active
- Lack of Social & Technical preparation
- Lack of Gathering & Storage Equipment for Forage
- Absence of mechanized milking machines
- Some farmers are not capable of assessing the in-heat period of carabao's
- Artificial Insemination (AI) Technicians are not pro-active
- Absence of mechanized milking machines
- Pole vaulting of milk
- Poor milk harvesting practices
- Inadequate facilities such as chillers, milking machines, cold storage facility among others
- Poor milk handling, Low production capacity
- Longer payment term

C. Industry Situation in the Region/Province

The Carabao-Based Enterprise Development (CBED) is a strategy aimed at establishing buffalo Dairy Zones to sustain such enterprises throughout the region. It is hinged on smallholders and is being implemented through the efforts of the Philippine Carabao Center (PCC). With this, genetically proven dairy buffaloes are installed in target communities with cooperatives, at a ratio of 25 cows to one bull. To date, there are 56 dairy buffalo cooperatives and 928 farmer-members which operate a village-based dairy buffalo enterprise that produces milk and which provides daily cash income for farmer members and their families.

D. Issues and Challenges Facing the Industry

1. Dairy Cooperative

- Continuous monitoring of member's dairy buffalo
- Milk collection and quality assurance
- Sell milk produce to the secondary cooperative in charge of milk collection
- Dysfunctional leaders
- Sustaining organizational growth
- Continuing herd build-up

2. Consolidator

- Strengthen its primaries
- Mediation and/or conciliation
- Sustaining organizational growth
- Payment of loans
- Timely payment of milk purchases from its primaries

3. Farmer-participants

- Improve productivity of their dairy buffalos
- Capital build-up
- Avoid selling breedable buffalos
- Milking their lactating animals twice a day

4. Processors

- FDA license
- Improved quality of processed products
- Packaging and labeling
- Join market promotion activities
- HACCP/GMP

E. Prospects & Opportunities

- Growing market demand
- National Dairy Development Act
- National Dairy Development Plan
- Harmonizing inter-agency support services
- Local Dairy Development

- Cluster-Based Development Strategy
- Philippine Traceability
- Value Chain Analysis as a planning tool
- Local and Regional Economic Development
- Green economy

F. Proposed Strategies for the Development of the Industry

- Cluster-Based Development Strategy
- PCC Impact Zone Development Program
- Philippine Traceability (P-trace)
- Value Chain Analysis as a planning tool
- Local and Regional Economic Development
- Green economy
- Market Development
- Productivity Improvement
- Enterprise Development
- Shared Services Facility (SSF)

Table 4

VI. Action Plan

Performance Indicators	Region 3					
	2012			2013		
	Target	Accomp. (1st Quarter)	Budget	Target	Accomp.	Budget
Amount of investments generated	10M			12M		
Amount of sales generated	10M			12M		
Amount of export sales generated ($)						
No. of Jobs generated	300			350		
No. of MSMEs created	10			10		
No. of MSMEs assisted	64			74		
Amount of loans facilitated						
No. of training programs conducted						
a. Productivity	4 training			6 trainings		
b. Managerial/Entrepreneurial	5 training			5 trainings		
c. Skills				5 trainings		
d. Technology Mission						

Performance Indicators	Region 3					
	2012			2013		
	Target	Accomp. (1st Quarter)	Budget	Target	Accomp.	Budget
No. of new products developed				5		
No. of new designs introduced	4			6		
No. of prototypes developed	4			6		
No. of trade fairs coordinated/participated	5			5		
No. of exhibitors	3			3		
Amount of sales generated	150,000			500,000		
No. of project proposals prepared				3 proposal		
No. of projects approved/funded				5 project		
Amount of loans approved				500,000.00		
No. of MSMES assisted				64		
No. of business consultancy rendered	100			120		
No. of clients served	64			64		
No. of tools/equipment provided						
No. of beneficiaries						
No. of info packages prepared	5			5		
No. of info packages disseminated	5			5		
No. of MSMEs benefited	64			64		
No. of activities conducted	5			6		

Table 5
BOTTOMLINE TARGETS CY 2012-2016
Dairy Industry

YEAR		Bottomline (Outcome) & Output Level Targets						
	Jobs	Investments (In P M)	Exports (US$M)	Domestic Sales (In PM)	# of MSMEs Created	# of MSMEs Assisted	Amount of Loans Facilitated	No. of Trainings Conducted/ Facilitated
2012	300	10M		10M	10	64		5 trainings
2013	350	12M		12M	10	74	300,000.00	16 trainings
2014	350	10M		10M	6	82	400,000.00	10 trainings
2015	360	10M		10M	10	92	350,000.00	12 trainings
2016	360	15M		12M	4	96	250,000.00	10 trainings

Table 6
Value Chain Analysis

STRATEGIC OBJECTIVE ELEMENTS	
Product	CARABAO'S MILK (Premium Quality Carabao's Milk)
Market	DepEd, Public Markets, Institutional Buyers, LGUs, Dairy Processors, and General Public
Growth Objective (s)	➢ Annual Growth Rate ➢ (to increase by 10% per annum)
Timeline	2013-2016
Key Strategy	➢ Breeding Stocks Improvement (Proper Feeding & Nutrition Management) ➢ Upgrading of Facilities ➢ Public/Private Partnerships

Constraints and Opportunities Analvsis

	Input Provision	Primary Production	Consolidation	Processing	Trading/ Distribution	Final Sale
Constraints	Artificial Insemination (AI) Technicians are not pro-active Lack of Social & Technical preparation Lack of Gathering & Storage Equipment for Forage	Absence of mechanized milking machines Some farmers are not capable of assessing the in-heat period of carabao's Artificial Insemination (AI) Technicians are not pro-active Absence of mechanized milking machines	Pole vaulting of milk Poor milk harvesting practices	Inadequate facilities such as chillers, milking machines, cold storage facility among others Poor milk handling, Low production capacity	Longer payment term	
Opportunities	Strong Government Support	Strong Government Support	Strong Government Support	Strong Government Support	Strong Government Support	
	Cooperatives support to each other				Increasing domestic market	
	Federations	Federations	Federations	Federations	Federations	

Value Chain Map
Figure 1

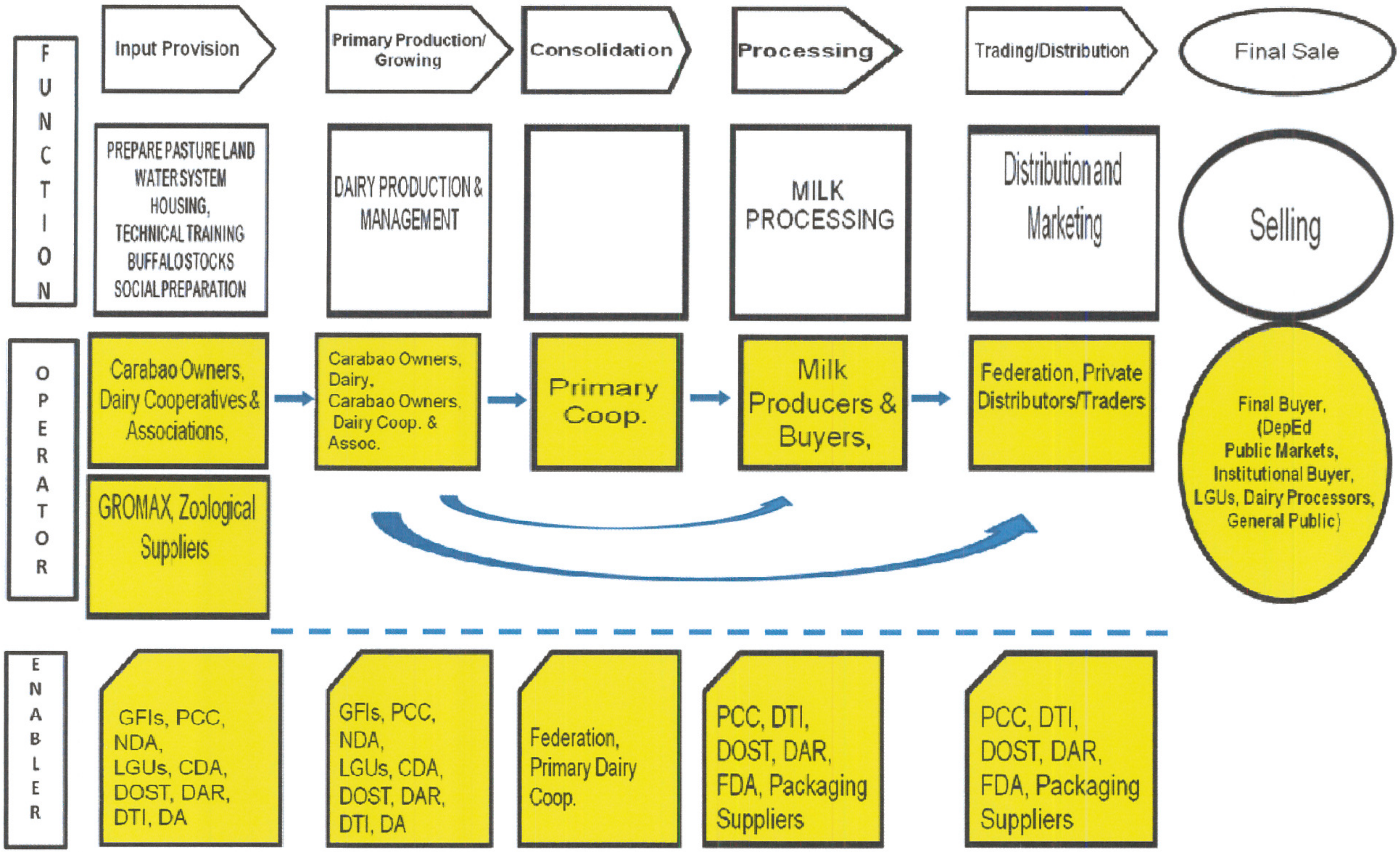

Table 7
Upgrading Action Plan

Constraint/Opportunity/ Need	Upgrading Area (A2M, A2F, BE, P&E)	Tasks/Activities	Responsible (Private)	Responsible (Government)	Timeline	Resources
Artificial Insemination (AI) Technicians are not pro-active		> Conduct refresher course for AI Technicians , > Coops to document their complaints regarding AI Technicians and submit it to PCC.		>PCC > LGU	June 2013	>MOOE
Lack of Social & Technical preparation		>Conduct of Values Re-Orientation Seminars	>NEFEDCCO >Primary Dairy Cooperatives	> ATI	July – Dec. 2013	>Coop. Training Funds
Lack of Gathering & Storage Equipment for Forage		>Provide equipment support to Dairy Coop. Through the Shared Service Facility (SSF) Project of DTI	>Cooperatives	>DTI >LGU	2014	>SSF Funds of DTI
Absence of mechanized milking machines		>Provide equipment support to Dairy Coop. Through the Shared Service Facility (SSF) Project of DTI	> Cooperatives	>DTI >LGU	2014	>SSF Funds of DTI
Some farmers are not capable of assessing the in-heat period of carabao's		>Refresher course on proper monitoring of heat period of carabaos	> Dairy Cooperatives	> PCC	June to August 2013	>MOOE
Defective stocks, Low quality milk, Low production		>Stocks replacement	> Dairy Cooperatives	>PCC	2013 - 2016	>Funds for Dairy Buffalo
Pole vaulting of milk		>Enforce contracting agreements ,discipline & internal policies among Dairy Cooperatives	> Dairy Cooperatives	>PCC	ASAP	>Policies
Poor milk harvesting practices		>Provide support for Milk Harvesting Facilities, packaging and labelling	> Dairy Cooperatives	>DTI >DOST	2014	>SSF >SET-UP Funds
Inadequate facilities such as chillers, milking		>Provide support for milk	> Dairy Cooperatives	>DTI >DOST	2014	>SSF >SET-UP

Constraint/Opportunity/ Need	Upgrading Area (A2M, A2F, BE, P&E)	Tasks/Activities	Responsible (Private)	Responsible (Government)	Timeline	Resources
machines, cold storage facility among others		storage facilities				Funds
Poor milk handling, Low production capacity		>Conduct refresher course on food safety & hygiene, application of food safety & hygiene practices	> Dairy Cooperatives	>PCC >DAR >DTI	2013-2016	Training funds
Low Production Capacity due to stocks mismanagement		>Impose disciplinary action to carabao owners or re-possess the carabaos	> Dairy Cooperatives	>LGU >PCC	2013-2016	Policies
Poor Organizational Management		>Monitor performance of Cooperatives	Cooperatives	>CDA >Respective LGUs	July 2013	Monitoring Evaluation Form
Negative Impact of Climate Change		>Orientation on the impact of Climate Change to the Dairy Sector	>Cooperatives >Small Owners	>LGU	July 2013	

Form 5
Dairy Carabao Industry Cluster
Organizational Chart

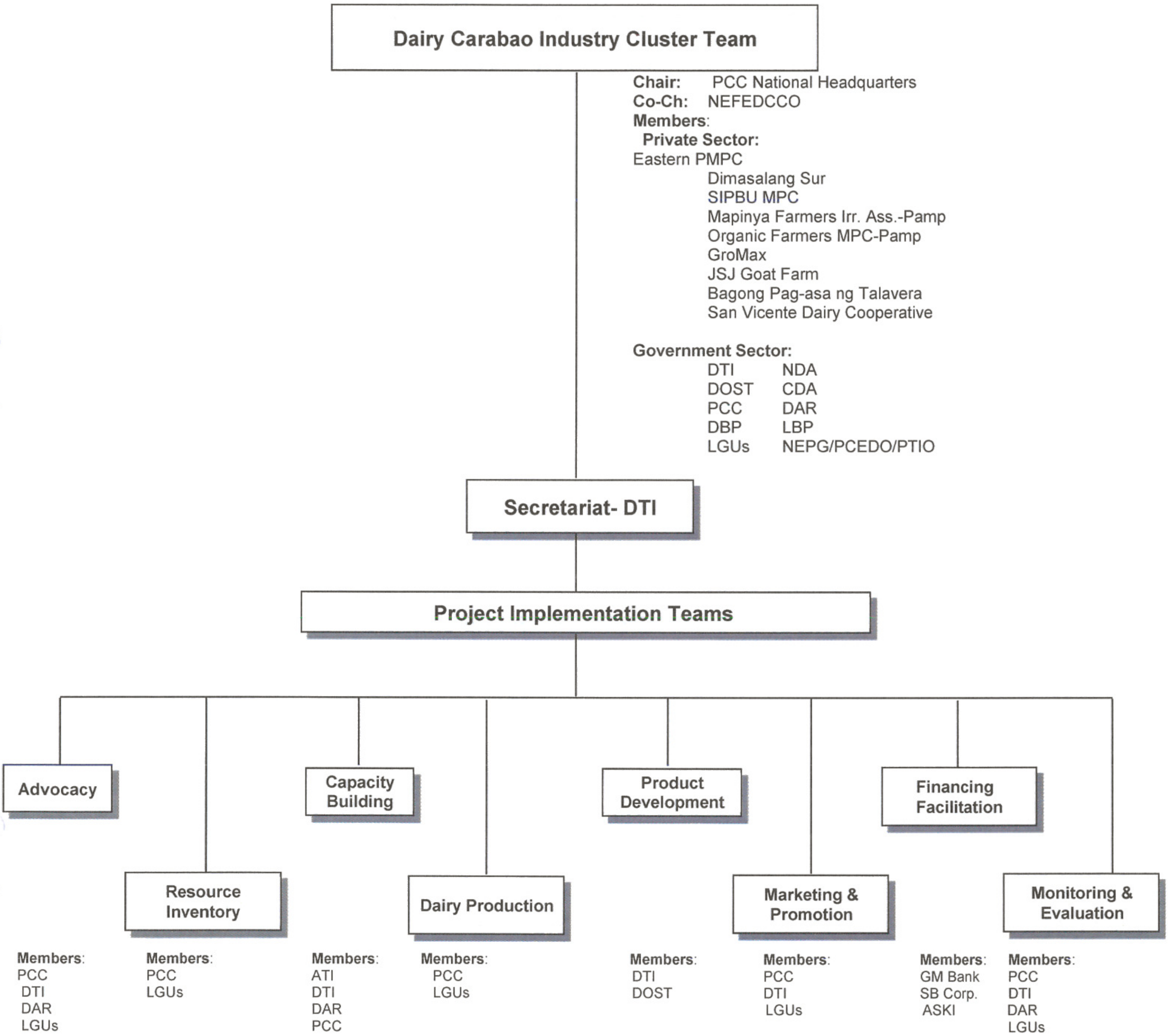

Table 8
Industry Cluster Facilitation Plan
(Action Plan of the Steering Body)

Activity	Responsible	Collaborator	Timeline	Resource
To polish the draft action plan	**DTI**	Members of the Cluster Team	June 2013	
Monitor implementation of the action plan	**Cluster Team**	Concerned parties	June 2013	
Review and re-plan	**Members of the Cluster Team**	Members of the Cluster Team	December 2013	

Appendix I
Directory of MSMEs Surveyed

Province	Name of the Company	Contact Person/ Owner	Address	Contact No.	Product Lines
Bulacan	Sta. Maria Dairy Farmers MPCI				Yoghurt, KesongPuti
	Kalamilk Soap Enterprises				Soap
Pampanga	MapińaCarabao Raisers Association	Andy Poe P. Garcia, Chariwoman	Sitio Mapińa, San Ildefonso ARC, Magalang, Pampanga	0907-425-7783	Pastillas, Choco Milk
	Mapińa Farmers Irrigators Association (MFIA)	Reynaldo Gutierrez, Chairman	Sitio Mapińa, San Ildefonso ARC, Magalang, Pampanga		Pastillas, Choco Milk
	Mapińa*Negosyo King Panyulung* Program (NPP) Association	Farahana Manlapaz, Chairwoman	Sitio Mapińa, San Ildefonso ARC, Magalang, Pampanga	0926-907-5941	Pastillas, Choco Milk
	Green Meadows Dairy Products	Nilo T. Reyes, Owner	#1 Diamond St, Fortuneville, Baliti, City of San Fernando, Pampanga	0915-493-4039	Choco Milk
	Pabalan Delicacies	Bernadette Pabalan, Owner	Brgy. San Nicolas 1st, Magalang, Pampanga	045-866-0855	Sweets and Delicacies
	Carreon's Sweets and Pastries	Francis Carreon, Owner	# 472 Brgy. San Nicolas 1st, Magalang, Pampanga	045-963-1073	Sweets and Delicacies
Nueva Ecija	NEFEDCCO	Edgar N. Mangahas, General Manager	Brgy. San Ricardo, Talavera, Nueva Ecija	c/o MCDO Benito P. Arma 044-411-0285	Pastillas, Choco Milk, Cheese,
	DVF Dairy Farm Inc.	Mr. Danilo V. Fausto, Owner	Brgy. Maestrang Kikay, Talavera, Nueva Ecija	044-411-1393 dvfdairyfarm@yahoo.com	Pastillas, Choco Milk, Cheese

Province	Name of the Company	Contact Person/ Owner	Address	Contact No.	Product Lines
	C &C Food Products	Ms. Cathy F. Armecin/ Stephanie Gatmaitan	#52 Maharlika Highway, Marcos District, Talavera, Nueva Ecija	044-949-8637 / 0927 -3796-141 / 0932-249-9007	Pastillas, kesongputi, Parmesan Cheese
	San Jose Cara Milk	Mercholyn Lubiano, Staff, City Cooperative Office, San Jose City	Brgy. Sibut, San Jose City	c/o City Cooperative Office 044-511-7960 veronicaparocha @yahoo.com	Pastillas, KesongPuti, Flavored Milk, Lechetin. Pasteurized Milk
	Ayin's				Pastillas, Yema
	Celings				Pastilas, Yema
Tarlac	Mountain Goat Farm	Angelina C. Mendoza	Tinio St. Mendoza Compound, Brgy. San Rafael, Tarlac	0920-954-9060 / 045-982-5148	Goat's milk, cheese, milk pastillas, yougart, ice cream, goat's meat
	JSJ Goat Farm	Jeffrey S. Lim	Brgy. Caturay, Gerona	0922-818-1488 / 09189080488	Goat's milk, cheese, pesto, milk pastillas, goat's meat, breeders
	Farm View Breeders		Brgy. Care, Tarlac City		Goat's milk, cheese, pesto, milk pastillas, goat's meat, breeders
	Isabel Farms		San Francisco, Tarlac City		Goat's milk, cheese, pesto, milk pastillas, goat's meat, breeders
	Ebenezer Zoe Goat Farm		Brgy. Aranguren, Bull Horn St., Capas		Goat's milk, cheese, pesto, milk pastillas, goat's meat, breeders
	Riso Farm		Purok 1, Lambak, Guagua, Pampanga		Goat's milk, cheese, pesto, milk pastillas, goat's meat, breeders
	Tanedo's Farm		Brgy. Tibagan, Tarlac City		Goat's milk, cheese, pesto, milk pastillas, goat's meat, breeders

Province	Name of the Company	Contact Person/ Owner	Address	Contact No.	Product Lines
	MARC-AGRO		Brgy. Mapalad, Tarlac City		Goat's milk, cheese, pesto, milk pastillas, goat's meat, breeders
	Yetten Boers		Florida Blanca, Pampanga		Goat's milk, cheese, pesto, milk pastillas, goat's meat, breeders
Zambales	Abagas' Pastillas*				Pastillas
	AgbulosPastillas*				Pastillas
	Asiatico'sPastillas *				Pastillas
	Bryan Pastillas				Pastillas
	Bulawen Dairy MPCI				Pastillas
	CalimlimPastillas				Pastillas
	Delia's Pastillas*				Pastillas
	Ebuen'sPastillas*				Pastillas
	Edeliana'sPastilla s				Pastillas
	Elsie's Pastillas*				Pastillas
	Enriquez Pastillas				Pastillas
	Flory's Pastillas				Pastillas
	Grace Pastillas*				Pastillas
	Ibang-IbaPastillas				Pastillas
	Jiellian'sPastillas				Pastillas
	Juliet's Pastillas				Pastillas
	Kim's Pastillas				Pastillas
	Lady Pastillas				Pastillas
	Linda's Pastillas*				Pastillas

Province	Name of the Company	Contact Person/ Owner	Address	Contact No.	Product Lines
	Luisa Miclat'sPastillas				Pastillas
	Merla'sPastillas*				Pastillas
	MiclatPastillas*				Pastillas
	NCY Pastillas				Pastillas
	Odan/Rosita's Pastillas*				Pastillas
	Ortiz Pastillas*				Pastillas
	Palauig Pastillas Producer's Coop. Inc.				Pastillas Pastillas
	Purita'sPastillas*				Pastillas
	Quinones Pastillas*				Pastillas
	Raissa'sPastillas				Pastillas
	Rica's Pastillas*				Pastillas
	Roldan'sPastillas*				Pastillas
	RosedPastillas				Pastillas
	Roslyn Pastillas*				Pastillas
	Sylvia MiclatPastillas*				Pastillas
	Teresita'sPastillas				Pastillas
	Zarmie'sPastillas				Pastillas
	ZMKI				Pastillas

Appendix II
Number of Carabaos, Female Breeders, By Farm Type, and According to Municipality
(April 2012)

PROVINCE/ Municipality in	CARABAO								
	Backyard			Commercial			Total		
	Total Inventory	Female Breeder	Number of Farms	Total Inventory	Female Breeder	Number of Farms	Total Inventory	Female Breeder	Number of Farms
CENTRAL LUZON	**175,535**	**68,685**	**90,821**	**3,888**	**2,859**	**36**	**179,423**	**71,544**	**90,857**
AURORA	**17,133**	**7,719**	**11,074**	**0**	**0**	**0**	**17,133**	**7,719**	**11,074**
BALER	811	277	602	0	0	0	811	277	602
CASIGURAN	2,521	1,551	1,352	0	0	0	2,521	1,551	1,352
DILASAG	2,966	1,239	1,854	0	0	0	2,966	1,239	1,854
DINALUNGAN	1,413	587	1,142	0	0	0	1,413	587	1,142
DINGALAN	847	287	726	0	0	0	847	287	726
DIPACULAO	1,581	571	1,229	0	0	0	1,581	571	1,229
MARIA AURORA	3,840	1,097	2,967	0	0	0	3,840	1,097	2,967
SAN LUIS	3,154	2,110	1,202	0	0	0	3,154	2,110	1,202
BATAAN	**5,883**	**2,613**	**4,047**	**25**	**20**	**1**	**5,908**	**2,633**	**4,048**
ABUCAY	183	32	122	0	0	0	183	32	122
BAGAC	1,097	276	806	0	0	0	1,097	276	806
BALANGA CITY	494	400	378	0	0	0	494	400	378
DINALUPIHAN	1,705	443	1,345	0	0	0	1,705	443	1,345
HERMOSA	1,191	767	657	25	20	1	1,216	787	658
LIMAY	10	4	10	0	0	0	10	4	10
MARIVELES	58	31	41	0	0	0	58	31	41
MORONG	120	66	95	0	0	0	120	66	95
ORANI	246	144	172	0	0	0	246	144	172
ORION	437	255	220	0	0	0	437	255	220
PILAR	185	114	113	0	0	0	185	114	113
SAMAL	157	81	88	0	0	0	157	81	88
BULACAN	**10,264**	**5,486**	**5,729**	**274**	**143**	**8**	**10,538**	**5,629**	**5,737**
ANGAT	278	132	209	0	0	0	278	132	209
BALAGTAS (BIGAA)	12	0	10	0	0	0	12	0	10
BALIUAG	159	73	114	0	0	0	159	73	114
BOCAUE	24	9	16	0	0	0	24	9	16
BULACAN	12	7	7	0	0	0	12	7	7
BUSTOS	183	78	106	0	0	0	183	78	106
CALUMPIT	114	89	61	20	17	1	134	106	62
GUIGUINTO	30	18	15	0	0	0	30	18	15
HAGONOY	46	29	34	0	0	0	46	29	34
MALOLOS	134	89	77	0	0	0	134	89	77

PROVINCE/ Municipality in	CARABAO								
	Backyard			Commercial			Total		
	Total Inventory	Female Breeder	Number of Farms	Total Inventory	Female Breeder	Number of Farms	Total Inventory	Female Breeder	Number of Farms
MARILAO	62	44	11	0	0	0	62	44	11
MEYCAUAYAN	67	25	19	194	70	4	261	95	23
NORZAGARAY	1,586	1,003	951	0	0	0	1,586	1,003	951
OBANDO	0	0	0	0	0	0	0	0	0
PANDI	270	100	183	0	0	0	270	100	183
PAOMBONG	30	19	27	0	0	0	30	19	27
PLARIDEL	403	261	205	0	0	0	403	261	205
PULILAN	191	85	93	0	0	0	191	85	93
SAN ILDEFONSO	1,909	1,024	1,201	19	18	1	1,928	1,042	1,202
SAN JOSE DEL MONTE	244	152	130	41	38	2	285	190	132
SAN MIGUEL	2,569	1,401	1,336	0	0	0	2,569	1,401	1,336
SAN RAFAEL	700	334	415	0	0	0	700	334	415
SANTA MARIA	440	228	168	0	0	0	440	228	168
DONA REMEDIOS TRINIDAD	801	286	341	0	0	0	801	286	341
NUEVA ECIJA	**36,620**	**15,578**	**22,960**	**3,084**	**2,462**	**15**	**39,704**	**18,040**	**22,975**
ALIAGA	3,022	1,519	1,779	0	0	0	3,022	1,519	1,779
BONGABON	1,876	719	1,380	0	0	0	1,876	719	1,380
CABANATUAN CITY	1,899	860	940	0	0	0	1,899	860	940
CABIAO	976	435	551	0	0	0	976	435	551
CARRANGLAN	1,152	653	786	0	0	0	1,152	653	786
CUYAPO	1,089	380	839	0	0	0	1,089	380	839
GABALDON	2,317	1,197	742	17	11	1	2,334	1,208	743
CITY OF GAPAN	877	453	512	55	40	1	932	493	513
GEN. MAMERTO NATIVIDAD	1,687	450	1,162	0	0	0	1,687	450	1,162
GEN. TINIO	769	387	484	62	55	2	831	442	486
GUIMBA	1,516	490	1,125	0	0	0	1,516	490	1,125
JAEN	969	447	590	0	0	0	969	447	590
LAUR	1,132	383	747	0	0	0	1,132	383	747
LICAB	392	188	273	0	0	0	392	188	273
LLANERA	1,426	602	959	30	8	1	1,456	610	960
LUPAO	872	323	591	0	0	0	872	323	591
MUÑOZ	1,220	538	709	524	245	2	1,744	783	711
NAMPICUAN	163	45	131	0	0	0	163	45	131
PALAYAN CITY	1,030	523	525	0	0	0	1,030	523	525
PANTABANGAN	784	320	556	157	54	4	941	374	560
PEÑARANDA	554	255	355	0	0	0	554	255	355
QUEZON	863	306	550	0	0	0	863	306	550
RIZAL	1,788	573	1,438	0	0	0	1,788	573	1,438

PROVINCE/ Municipality in	CARABAO								
	Backyard			Commercial			Total		
	Total Inventory	Female Breeder	Number of Farms	Total Inventory	Female Breeder	Number of Farms	Total Inventory	Female Breeder	Number of Farms
SAN ANTONIO	1,370	365	948	0	0	0	1,370	365	948
SAN ISIDRO	287	164	159	24	21	1	311	185	160
SAN JOSE CITY	1,482	824	1,119	2,100	1,950	1	3,582	2,774	1,120
SAN LEONARDO	385	191	182	0	0	0	385	191	182
SANTA ROSA	926	493	552	0	0	0	926	493	552
STO. DOMINGO	902	370	577	0	0	0	902	370	577
TALAVERA	1,678	610	1,044	115	78	2	1,793	688	1,046
TALUGTUG	693	371	417	0	0	0	693	371	417
ZARAGOZA	524	144	238	0	0	0	524	144	238
PAMPANGA	**19,757**	**7,666**	**7,081**	**259**	**91**	**5**	**20,016**	**7,757**	**7,086**
ANGELES CITY	337	105	140	0	0	0	337	105	140
APALIT	787	246	466	0	0	0	787	246	466
ARAYAT	1,232	712	634	55	35	1	1,287	747	635
BACOLOR	232	63	107	76	27	1	308	90	108
CANDABA	1,379	472	809	0	0	0	1,379	472	809
FLORIDABLANCA	1,598	808	864	0	0	0	1,598	808	864
GUAGUA	711	275	240	0	0	0	711	275	240
LUBAO	996	309	295	0	0	0	996	309	295
MABALACAT	878	402	413	0	0	0	878	402	413
MACABEBE	25	11	12	0	0	0	25	11	12
MAGALANG	1,044	384	460	0	0	0	1,044	384	460
MASANTOL	2	1	1	0	0	0	2	1	1
MEXICO	2,593	873	792	0	0	0	2,593	873	792
MINALIN	8	0	3	40	10	1	48	10	4
PORAC	6,210	2,413	1,068	0	0	0	6,210	2,413	1,068
SAN FERNANDO	370	78	168	88	19	2	458	97	170
SAN LUIS	217	80	94	0	0	0	217	80	94
SAN SIMON	57	21	27	0	0	0	57	21	27
SANTA ANA	640	274	318	0	0	0	640	274	318
SANTA RITA	430	138	167	0	0	0	430	138	167
SANTO TOMAS	11	1	3	0	0	0	11	1	3
SASMUAN	0	0	0	0	0	0	0	0	0
TARLAC	**60,206**	**20,241**	**27,987**	**110**	**75**	**3**	**60,316**	**20,316**	**27,990**
ANAO	182	45	160	0	0	0	182	45	160
BAMBAN	894	484	423	0	0	0	894	484	423
CAMILING	2,871	366	1,002	0	0	0	2,871	366	1,002
CAPAS	3,857	2,636	1,398	0	0	0	3,857	2,636	1,398
CONCEPCION	3,350	1,706	1,095	0	0	0	3,350	1,706	1,095
GERONA	8,811	2,502	6,848	0	0	0	8,811	2,502	6,848
LA PAZ	1,883	650	1,180	0	0	0	1,883	650	1,180

PROVINCE/ Municipality in	CARABAO								
	Backyard			Commercial			Total		
	Total Inventory	Female Breeder	Number of Farms	Total Inventory	Female Breeder	Number of Farms	Total Inventory	Female Breeder	Number of Farms
MAYANTOC	3,378	765	1,076	0	0	0	3,378	765	1,076
MONCADA	918	275	638	0	0	0	918	275	638
PANIQUI	11,290	3,510	4,860	0	0	0	11,290	3,510	4,860
PURA	2,458	508	1,162	0	0	0	2,458	508	1,162
RAMOS	579	251	400	0	0	0	579	251	400
SAN CLEMENTE	299	85	193	0	0	0	299	85	193
SAN MANUEL	517	102	239	0	0	0	517	102	239
SANTA IGNACIA	5,714	2,275	1,382	0	0	0	5,714	2,275	1,382
TARLAC CITY	4,372	1,611	1,409	80	55	2	4,452	1,666	1,411
VICTORIA	1,953	489	802	0	0	0	1,953	489	802
SAN JOSE	6,880	1,981	3,720	30	20	1	6,910	2,001	3,721
ZAMBALES	**25,672**	**9,382**	**11,943**	**136**	**68**	**4**	**25,808**	**9,450**	**11,947**
BOTOLAN	3,418	1,561	1,177	52	20	1	3,470	1,581	1,178
CABANGAN	1,290	488	472	0	0	0	1,290	488	472
CANDELARIA	1,651	638	784	0	0	0	1,651	638	784
CASTILLEJOS	1,750	355	683	0	0	0	1,750	355	683
IBA	1,479	683	560	0	0	0	1,479	683	560
MASINLOC	1,646	722	792	0	0	0	1,646	722	792
OLANGAPO CITY	40	14	25	0	0	0	40	14	25
PALAUIG	3,157	1,321	1,159	0	0	0	3,157	1,321	1,159
SAN ANTONIO	1,512	548	1,034	0	0	0	1,512	548	1,034
SAN FELIPE	1,143	301	318	0	0	0	1,143	301	318
SAN MARCELINO	2,423	782	1,545	27	14	1	2,450	796	1,546
SAN NARCISO	2,247	817	1,307	57	34	2	2,304	851	1,309
SANTA CRUZ	3,117	1,006	1,867	0	0	0	3,117	1,006	1,867
SUBIC	799	146	220	0	0	0	799	146	220

Appendix II
List of References

- **Medium Term Development Plan For Dairy (1988-1993)**
- **Philippine Dairy Industry – Industry Studies Department, Board of Investment March 11, 2011**
- **Philippine Dairy Development Plan, 2008-2030, National Dairy Authority**
- **Industry Clustering Using Value Chain Approach**
  Transforming Relationships to Increase Competitiveness and Focus on
  Undersecretary Merly M. Cruz, RODG, 12 March 2012