

**STRATEGIES FOR IMPROVING MARKET ACCESS AMONG SMALL DAIRY PROCESSORS: A Case  
Study of Annapurna Dairy Cooperative, Chitwan District of Nepal**



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I dedicate this work to my parents who brought me in this universe and gave strength throughout my life. Also dedicated to my wife, Sushila Barakoti Nepal for her continuous support and for her selfless love.

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## List of Abbreviations

ADPCL	Annapurna Dairy Producer Cooperative Limited
AI	Artificial Insemination
APCM	Agricultural Production Chain Management
CBS	Central Bureau of Statistics
DDC	Dairy Development Corporation
DFTQC	Department of Food Technology and Quality Control
DLS	Department of Livestock Services
DLSO	District Livestock Service Office
EBIT	Earnings before Interest and Tax
FAO	Food and Agriculture Organization of United Nations
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GM	General Manager
MCC	Milk Collection Centers
MEDEP	Micro-Enterprise Development Programme
MPC	Milk Producer Cooperative
MT	Metric ton
NDDB	National Dairy Development Board
NLBC	National Livestock Breeding Center
NMC	Nepal Multi-Purpose Cooperative
SNF	Solid-not-Fat
SWOT	Strength, Weakness, Opportunities and Threat
VCA	Value Chain Analysis

## Abstract

Annapurna dairy producer cooperative limited (ADPCL) is a small dairy cooperative located in Chitwan, Nepal. The cooperative is doing the function of collecting milk from its member farmers, processing the milk into dairy products and finally distributing the products to the market. The problem faced by the cooperative is it could not process all the milk collected due to the limited market access of the processed dairy products. The objective of ADPCL is to process all the milk collected and sell the processed dairy products in order to pay back good money to the member farmers.

The research design has a qualitative approach which is based on empirical data and literature review. The secondary information was collected to know the dairying in Nepal and marketing system of dairy products prevalent in the present condition. The primary information was collected through interviews with the stakeholders of the dairy value chain in Chitwan and focus group discussion with them. The findings were compared with competitor's proposition and also with literature.

The study found that ADPCL has maintained a good relationship with the producer farmers and with the retailers. However, there is no formal contract between ADPCL and its customers. ADPCL produces only pasteurized milk, yogurt in a pouch, paneer, and ghee. Also it is found that the processing capacity for the production of dairy products by ADPCL is used 31% and less. The Marketing Manager and salesmen working for ADPCL do not play active role in marketing of the dairy products. For the distribution of dairy products, ADPCL uses only one channel while DDC and NMC use 3 distribution channels. The study found the customers' need and requirement depend per sales channels. Most of the retailer outlets look profit, service and constant quality for selling of the dairy products. Furthermore, it is found that supermarkets and grocery shops expect to have paneer in vacuum packaging and yogurt in a container of different volume.

Based on the interviews and focus group discussion with the stakeholders of the dairy value chain, it is concluded that there is a considerable demand for processed dairy products in Chitwan and has many opportunities for ADPCL to improve the market access of its dairy products. They have basic infrastructure for the differentiation of dairy products and is utilized. Only small investment is required for the production of vacuum packed paneer and yogurt in container which has good demand from the current market.

It is recommended ADPCL for the capacity building of marketing staff to do effective and efficient marketing. Also, ADPCL should start the production of yogurt in container and vacuum packed paneer which has good demand in the market to improve the sales. Furthermore, it is recommended to investigate the new market within the current market and also in new geographical location. ADPCL can contract private distributor for the marketing and distribution of their dairy products in new locations.

**Key words:** Value chain, Market access, Marketing, Processed dairy products, Cooperative

## Chapter 1: Introduction

### 1.1 The dairy sector in Nepal

The dairy sector plays an important role in Nepal's national economy; it contributes 60% of the total livestock contribution to Gross Domestic Product (GDP) of Nepal (DLS, 2016). The annual milk production in the country is relatively low (1.85 million ton) in comparison to the number of dairy animals (approximately 7 million cows and 5 million buffaloes (DLS, 2016). Furthermore, the Nepalese per capita consumption of milk is approximately 58 liter per year, which is much lower than the recommendation of the World Health Organisation that suggests an intake of approximately 92 liters per year.

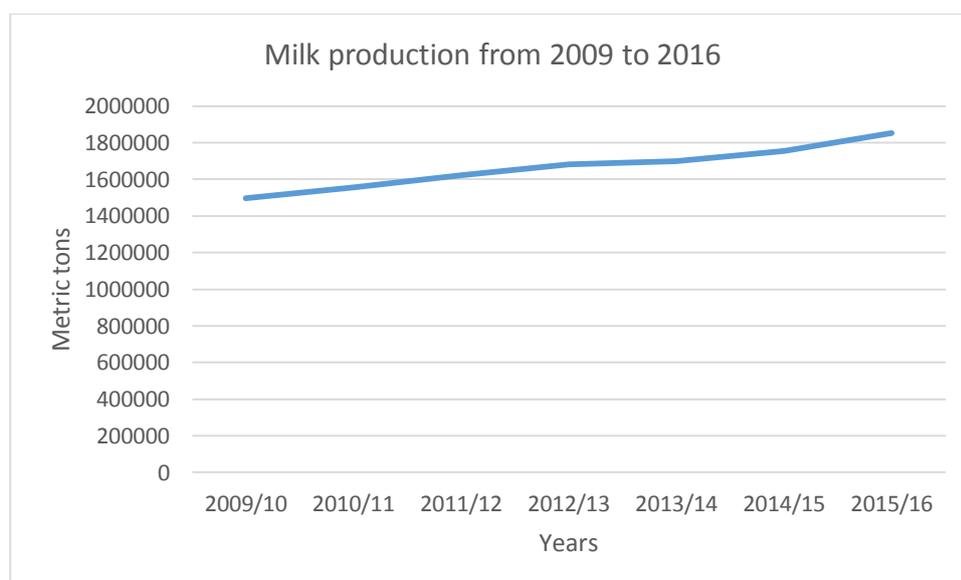
Table 1: Cattle and buffalo population and milk production in Nepal

Dairy animals	Total number	Milking	% milking	Total milk production (MT)
Cattle	7302808	1026135	14.05	643806
Buffaloes	5168809	1355384	26.22	1210440
Total				1854247

Source: DLS (2016)

Total yearly milk production in Nepal is increasing on a yearly basis. However, the increase in production cannot keep pace with the demand of the customer. As a result there is a deficit in milk production and therefore Nepal imports about 45,734 MT of milk annually to fulfill the demand (NDDDB, 2014). A unique point about the dairy sector in Nepal is that it is one of the few enterprises which generates flow of money from urban centre into the rural economy, besides contributing to maintaining and sustaining the nutrient content for children in Nepal.

Figure 1: Trend of milk production in Nepal



Source: DLS (2016)

## 1.2 Milk marketing in Nepal

Milk marketing in Nepal can be separated into two segments, the informal and the formal segment. In the Informal or rural component of dairy marketing, most of the milk produced is consumed within producer's households and the surplus milk is marketed directly to consumers or through collecting agents. The collecting agents or middlemen carry the raw milk and sell it directly to the consumers. According to NDDB report (2017) on the cost of milk production and FAO report on dairying in Nepal (2010), about 80 - 85% of the milk production is supplied through the informal route whereas only 15 -20% of the total milk production goes via the formal route. In the formal component of milk marketing, the milk produced by the farmers is first collected and purchased. The collection function is performed by Milk producers' cooperatives (MPCs). The collected milk is then processed either by the government-owned Dairy Development Corporation (DDC) or by private dairies who distribute the fresh pasteurized milk and other milk products to the market. DDC is the first public dairy sector established under corporation act of Nepal 1964. Private dairies operate in the same way as DDC does, the collection of milk from the farmers and farmer groups, processing it into milk and milk products and distributing it to different market segments.

## 1.3 Milk marketing in Chitwan

Chitwan district is located in the central part of the country, 146 kilometer South-West of Kathmandu, the capital city of Nepal. It has become the highest milk producing district of Nepal and also leading district in presenting the number of improved breeds of cattle (DLSO Chitwan, 2016). The most preferred cattle breed by the dairy farmers in the district is Jersey cross and Holstein cross breed (DLS, 2016).

Currently, there are 140 big and small dairies in Chitwan district. These dairies sell either processed or unprocessed milk through formal and informal route. Bharatpur metropolitan city, Ratnanagar Municipality and Sauraha are considered as the biggest market within the district for the dairy products (Paulus *et. al.*, 2017). Small grocery shops, small dairy shops (milk booth) who retails only dairy products, supermarkets etc. are the major retailers selling the dairy products.

## 1.4 Annapurna Dairy Producer Cooperative Limited (ADPCL)

Annapurna dairy producer cooperative limited (ADPCL) is one of the oldest dairy cooperatives of Nepal established in 1984. It is located in Bharatpur metropolitan city, Chitwan, specialized in the collecting, chilling, processing and marketing of the milk produced by its 346 member farmers. The member farmers have a range of 2-22 milking cattle for milk production. The cooperative collects 4000 to 4200 liters of milk per day from members. About half of the milk collected is processed into different dairy products like pasteurized milk, yogurt, paneer, ghee etc. The other half of the milk is supplied to other dairy processors in the Kathmandu valley.

## 1.5 Agriterra

Agriterra is a network organization of Dutch farmers and their organisations. It has a vision that farmers' associations and cooperatives can have a positive influence on the development of colleague organisations in developing countries through speeding up the process and ensuring an equal distribution of income and an enhancement of democratic decision making and relations. The key area of action for Agriterra is to support these organizations in enhancing the entrepreneurship of their members, improving their advocacy results on the basis of members' interests, and making cooperatives with investment plans bankable. Agriterra uses three approaches; grassroots entrepreneurship, advocacy and agribusiness development.

According to Njarui *et. al.*, (2010), for the development of dairy industry in a country, processing and marketing of milk are important elements. Lack of processing and marketing skills, competition with other dairy processors for a market is the greatest threat to small dairies (Njarui *et. al.*, 2010).

Successful processors know about their competitors and their products and services they offer (Axtell *et. al*, 2010). Small dairy processors claim that the other competitors attract retailers by giving higher commission but supplying sub-standard dairy products (Axtell *et. al*, 2010). Supplying sub-standard dairy product, these processors are getting benefited of poor inspection and control by public health department while they do not concern public health risk in developing countries.

Agriterra collaborates with ADPCL in order to improve the profitability of the cooperative and the profitability of dairy farming for the members through increasing the volume of processed dairy products from 2000 liters today to 4000 liters in 2 years' time. The biggest challenge ADPCL is facing in realizing this ambition is a lack of marketing capacity and strategy on selling the processed products. There is high demand of dairy products in the market however, ADPCL finds it challenging to create a strong brand that is recognized by the consumers. They currently depend on retailers pushing their products and they have not made attempts to gain confidence of end consumers directly through any kind of marketing/branding activities. Processing capacity is available in the current facility, but it is not used to its optimum because the cooperative cannot find sufficient market. ADPCL and Agriterra therefore mainly focus on strengthening the marketing and organizational capacity of the organization.

### 1.6 Problem Statement

ADPCL collects on average of 4000 litres of milk daily produced by the dairy farmers. Besides collection and chilling, it has established with a capacity of processing 7000 liter of milk daily to add value to the milk produced by the member farmers. The cooperative only processes 2000 liter of the total 4000 liter collected on a daily basis. The remaining 2000 litres of fresh milk is sold to other private processors near to Kathmandu. The margin of selling processed milk and milk products is much higher than selling fresh raw milk. Compared to the other private dairy processors, the product of the ADPCL is higher in quality in terms of fat percent present in the processed milk. However, the dairy cooperative is facing limited market access of the processed dairy products to different towns of Chitwan and Nawalparasi districts. This is due to inadequate marketing strategies for selling of processed dairy products and insufficient knowledge on accessing high price market outlets of the quality products which results in decrease revenue of the cooperative (Paulus *et. al.*, 2017).

### 1.7 Problem Owner

Annapurna Dairy Producer Cooperative Limited has installed a processing facility in order to add value to the milk produced by its member farmers. However, the cooperative is not able to process all of the collected milk because the cooperative is unable to market the products. This is a concern of the members as they have invested in their cooperative and expect returns through higher milk prices and dividend.

### 1.8 Objectives

The objective of ADPCL is to process all the milk collected from the member farmers and sell the processed dairy products in high and medium end markets.

### 1.9 Research questions

**What are the challenges in the marketing of dairy products in the present condition?**

- What are the roles of stakeholders involved in the value chain of ADPCL?
- What are the revenues, costs and risks distribution among the actors in the dairy value chain of ADPCL?
- What type of market information does ADPCL need to improve the selling of processed dairy products?
- What are the potential end markets for the marketing of dairy products?

**What marketing strategies can be adopted to improve the selling of processed dairy products?**

- What are the marketing systems and conditions required/preferred in the medium and high priced market?
- What are the dairy products to focus on in order to realize maximum profit margin?
- Which business model can be suitable for the market access of the processed dairy products?
- What is required by the cooperative to improve the sustainable marketing of the dairy products?

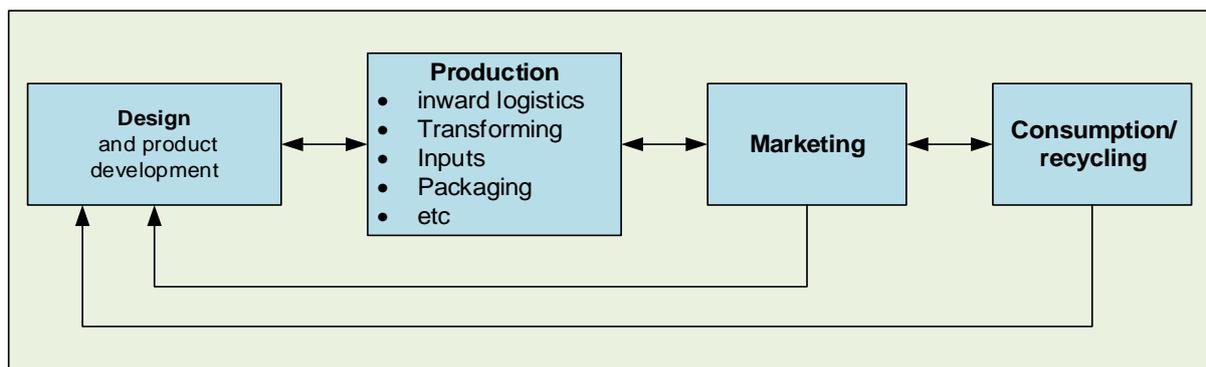
## Chapter 2: Literature Review

### 2.1 Value chain concept

#### 2.1.1 Value chain: Definition of the concept

Value chain approaches have been used by many businesses today for the strategic planning and for obtaining the interaction of the dynamic market and to examine the interconnection between the diverse stakeholders in the chain (Rich et.al, 2009). Value chain approaches are used to identify the opportunities and constraints for increasing productivities by analyzing the interaction between the firms and processes. The value chain describes the full range of activities required to bring a product or services through the series of different stage of production. It also includes the physical transformation of the inputs of various stakeholders to response the demand of the customer and final disposal after use (Kaplinsky and Morris, 2000). A dairy value chain may involves the activities from input supplying, producing of milk, chilling and processing of milk, distribution of dairy products and retailing of the processed products and final consumption.

Figure 2: Four links in a simple value chain



Source: Kaplinsky and Morris (2000)

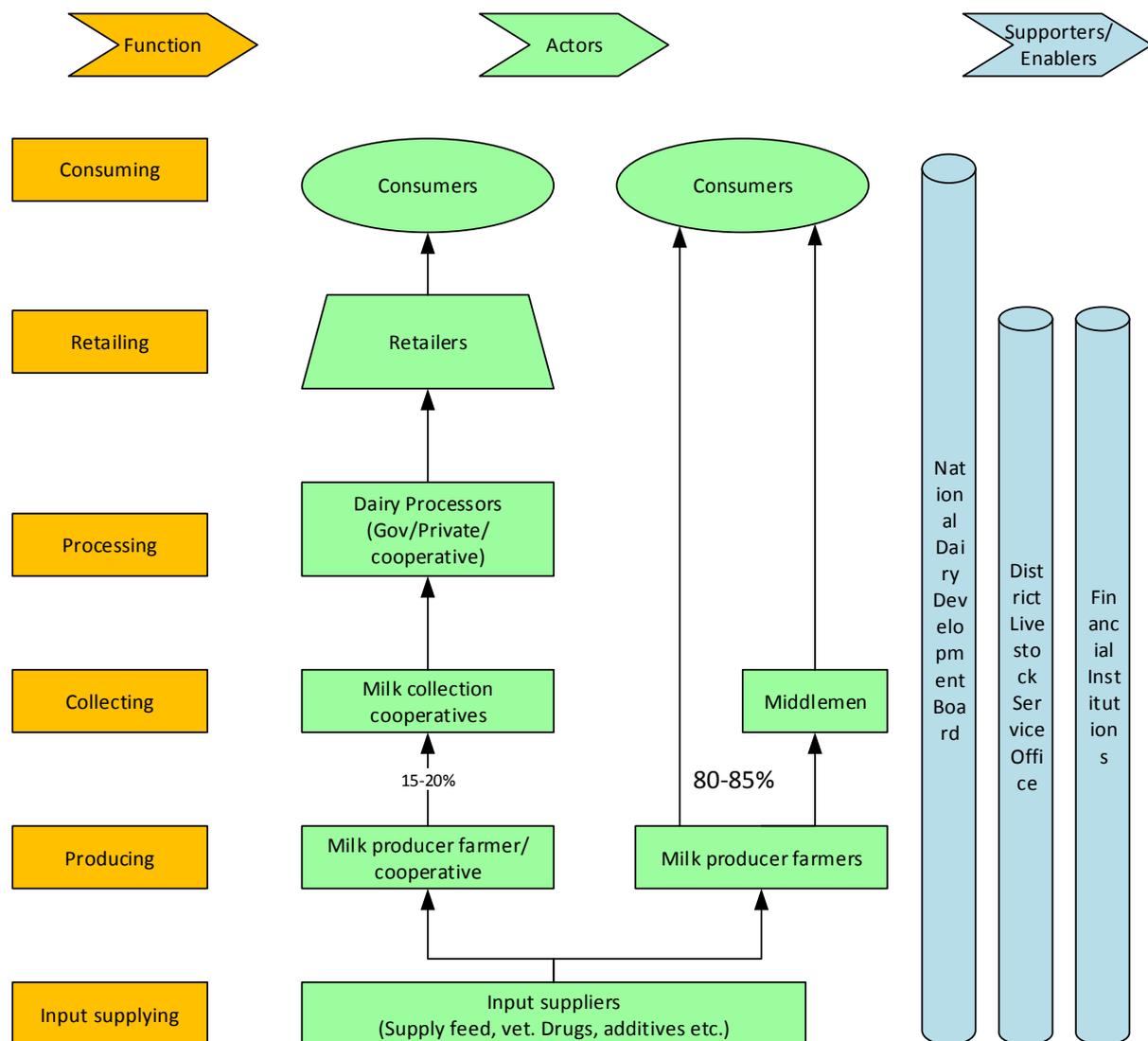
#### 2.1.2 Value chain Analysis (VCA)

According to the Institute of Development Studies, University of Sussex (IDS), a value chain analysis has four major components. Firstly, systematic mapping of the actors involved in input supply, production, collection, marketing, and sales of the final product should be done. This defines actors, cost and revenue structure, volumes and destination of the products flow throughout the chain (Kaplinsky and Morris, 2001). Secondly, it focuses on the governance of the value chain, the pattern of relationship and coordination mechanism prevailing between the actors of the value chain (Gibbon *et. al.*, 2008). The chain governance is important for policy as it helps to identify the bottlenecks and also to search an institution for support to the targeted to improve capabilities, to correct distributional distortions and increase value addition.

Thirdly, it reviews the impact of upgrading within the chain. Upgrading can include the improvement in quality, production processes, access to new market and diversification of the product. The process of analyzing upgrading involves the assessment of the profitability of the actors within the chain as well as the constraints they face on upgrading. It also realizes the capabilities of the actors on upgrading for continuous improvement process (Rich *et al.*, 2009). Finally, VCA helps to identify the benefit distribution within the chain. From this analysis, it gives an idea of value added within the chain and which actor is benefitted after providing support.

VCA can be done through quantitative and qualitative methods. Information collected through primary survey, interviews, focus group discussion, rapid appraisal and secondary data can be used for analysis. The information collected can show the linkage and interaction between chain actors in the chain and aid in identifying the constraints within the chain that require further discussion.

Figure 3: Basic dairy value chain of Nepal



Source: NDDDB report (2017)

### 2.1.3 Qualitative Analysis

**Chain Actors:** Chain actors are the individual, group or cooperatives, companies etc. who own or deal with the products; produce, process, trade and consume. They add value to the product produced by one actor and supply to other actors till final consuming. In dairy value chain of Nepal, input suppliers like drug suppliers, feed suppliers, dairy farmers, Milk collection centers (MCCs), milk processors (private or public), retailers of dairy products and consumers are the actors involved.

**Chain supporters:** Chain supporters are the private or public organizations that have direct relationship with chain operators and provide support services to the whole chain and/or represent the common interests of chain actors (MEDEP report, 2009). National dairy development board,

District livestock service office, Department of Food technology and Quality Control (DFTQC), cooperative society, commercial banks are the major supporters of dairy value chain in Nepal.

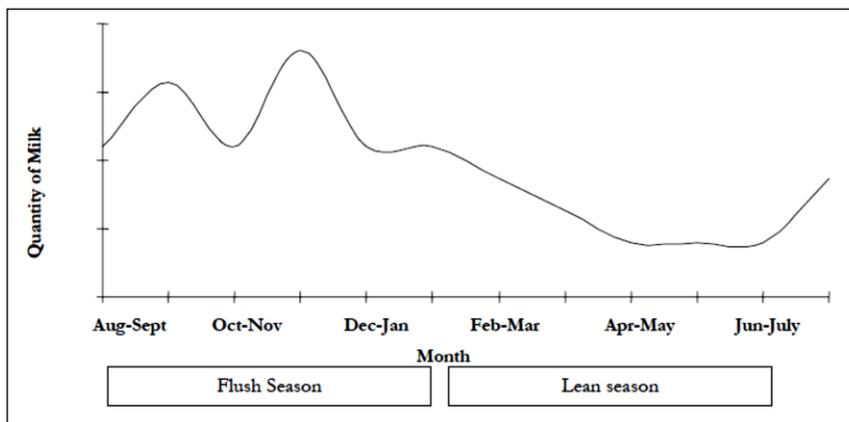
**Information flow:** The information flow between the stakeholders of the value chain is very important for effective logistics and demand management. Lack of information flow among the stakeholders of the chain could imply a lack of responsiveness, mistrust among each other, different interest, lack of clarity about the problem and a lack of willingness (Sweeney, 2006). In dairy value chain, the information on customer and consumer’s requirements like milk volume, milk quality, milk pricing, type of dairy products etc. are very important to take decisions.

**Market access and Risk**

Small-scale dairy processors take part in the processing function as they have played a role in preserving milk and adding value to the milk. However, they are not aware of the need of the market since they are mainly focused on the supply of dairy products. (Axtell *et. al.*, 2008). Successful processors create the products that meet the need of the customers. A fluctuating market demand provides great opportunities for the companies involved in processing (Axtell *et. al.*, 2008). An example of this is Mozzarella cheese, the demand of Mozzarella is a lot higher after the introduction of pizza in some countries.

In the Nepalese market, 85% of the milk is sold through the informal route, the milk is sold directly to the consumers by the producer or middlemen. This is one of the challenges to the dairy processors to enter the formal market because the consumers are not aware of processed dairy products. Many consumers hesitate to buy packaged pasteurized milk thinking that chemicals are added to it to make it. Also, the fluctuation of milk volume from the suppliers made difficult to constant supply of dairy products to the market by the dairy processors.

Figure 4: Pattern of seasonal variation in milk collection in Nepal



Source: Dairying in Nepal, FAO report (2010)

**2.1.4 Quantitative Analysis**

**Costs, revenue and value shares:** Costs are made through all the activities that creates value or addition of value in a product or services. For instance, for the pasteurization of milk, the costs involves could be either observable or non-observable in the form of variable and fix costs. Costs for buying of raw milk, costs of electricity, packaging etc. are variable cost while the depreciation cost, interest cost, maintenance cost for processing plant etc. are fix cost involved during processing of milk.

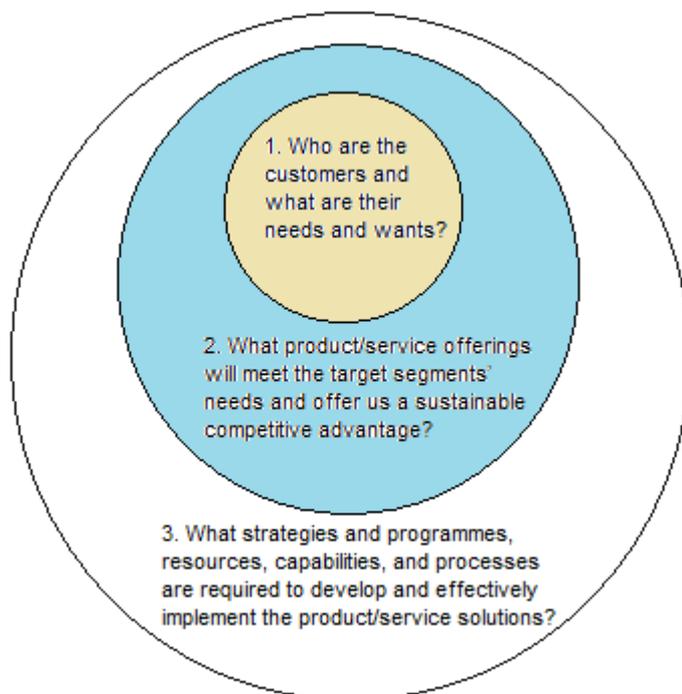
Revenue is generated from the selling the products or services and by other income earned by selling of by-products (KIT and IIRR, 2008). In dairy value chain, the revenue can be generated by selling of

processed and unprocessed milk. The percentage of the final retail price that the actor earns is the value share of that actor. It is calculated as added value divided by final retail price multiplied by 100. According to the NDDB report, (2013), the producer farmer, collection center, processor and retailers are getting share of 57%, 7%, 34% and 2% respectively.

## 2.2 Marketing Information System and Research

Marketing is everything that creates the value to win the heart of individual customer and fulfill organizational objectives by planning and implementing the conception, pricing, promotion and distribution of ideas, goods, and services (Burnett, 2008). Information is vital on all the marketing channels available before taking the go-to-market decision. In the dairy sector, it is important to understand the potential market for certain types of dairy products (FAO, 2001). Market information helps dairy processors to know and understand the customers' needs or requirements, competitor's type and products so as to deliver the right product, in the right quantity, in right time, and in right place (FAO, 2001).

Figure 5: Marketing strategies (Segmentation)



Source: the marketing book, Baker (2003)

## 2.3 The 6 Ps of Marketing

The marketing mix is a helpful device that could be used by an enterprise to pursue its marketing objectives in the target market (Kotler *et. al.*, 1999). The marketing mix is a tool used by the marketing managers to design their offers rather than a theory of management (Goi, 2009). By tradition, the marketing mix consisted of 4 Ps; product, price, place and promotion. At a later point in time, 2 Ps were added, people is the central target and performance is the ultimate objectives is used for the analysis.

Table 2: 6Ps of marketing

Product	The tangible item people purchase and consume (including services provided)
Price	The actual price you set for the product to offer the best value for the benefit delivered
Place	The actual price you set for the product to offer the best value for the benefit delivered
Promotion	How you communicate the existence of your product and its benefits (Advertising, in-store offers, direct marketing, Personal relations)
People	Who are the potential customers? (Customer segment, end consumers)
Performance	What are the strategic and financial objectives? (Market share, segment share, price realization)

Source: Goi (2009)

## 2.4 Challenges in Scaling up of the business

Scaling up of the business leads to new challenges to the organization. It needs to employ more people, which requires a higher level of management skills, needs careful control on finance especially on cost of production and distribution, requires skills on business management and financial planning to stay ahead of competitors and decisions on investment for new technology like equipment, packaging etc. (Fellows and Rottger, 2005). Other challenges include more need for market research, product development and business image.

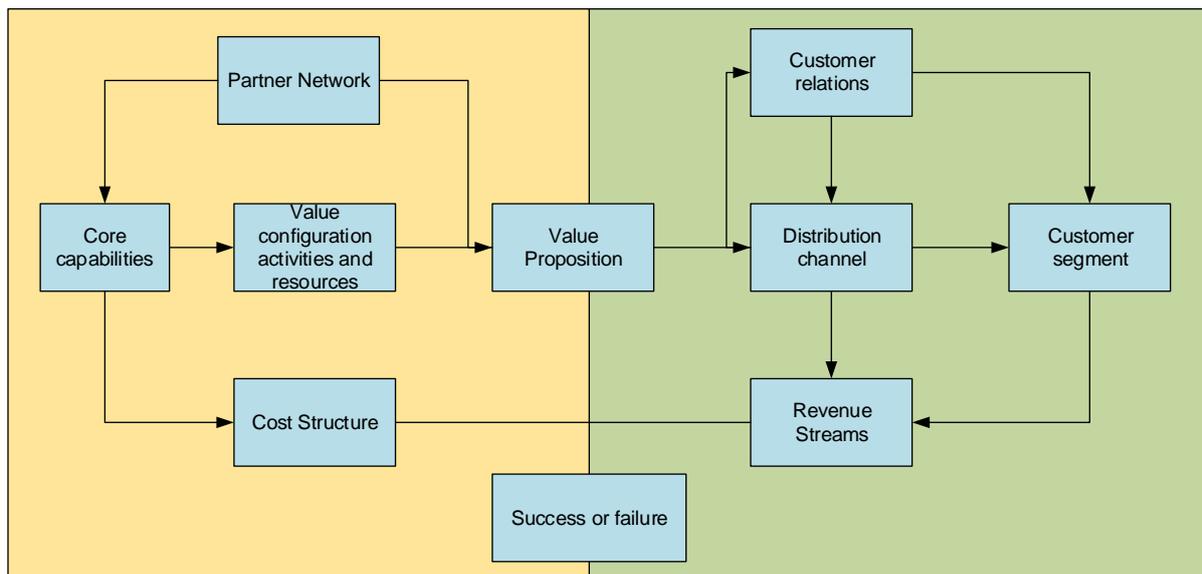
## 2.5 Business Model

The business model can be described as “stories that explain how enterprises work” (Masanell and Ricart, 2009). The business model shows how an enterprise organises itself and its relationships with its customers in order to create and capture value. The idea of a business model is to create a value proposition, by keeping together production, marketing, costs and revenues, in the marketplace that differentiates the firm from its competitors (Vorley *et. al.*, 2009). According to Stefan and Richard (2014), a business model is system of using resources and does activities that create value to the customer. This added value also creates money for the firm.

According to Osterwalder and Pigneur (2010), business model has mainly the two broad areas, the production and the marketing side. The yellow area in figure 1 represents the production side and the green area represents the marketing side. The production side includes the series of actions and relationships that create value, in other words, is to provide goods and/or services. In order to reach a competitive advantage, it is important to have good coordination among the chain actors and supporters – partner network. The marketing side includes the series of actions to capture values by selling that good and services. In general, production side is associated with cost while the marketing side makes revenues.

It is important to consider the value proposition and the cost management structures of the success of any business model. In modern agro-food chain, the value proposition is basically based on food safety and quality, availability of foods, price and brand. It is very sensitive to risk and extra cost.

Figure 6: Canvas Business Model

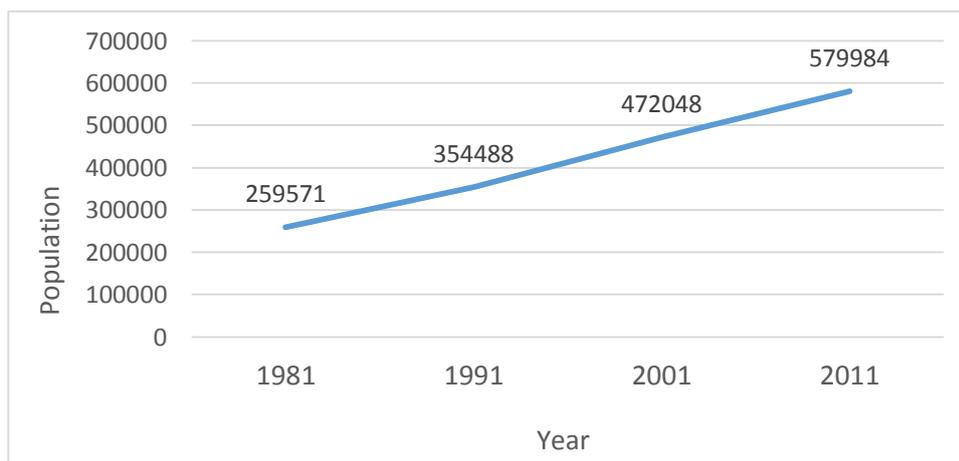


Source: Osterwalder and Pigneur (2010)

## 2.6 Population change in Chitwan district

The population of the Chitwan district is growing every year due to the migration of people from other districts and the increase in birth rate (CBS, 2011). The population growth is presented in the figure 7. Bharatpur metropolitan city is the biggest city of Chitwan district and one of the fast growing cities of Nepal. According to the CBS (2011), more than one-third of the total population of Chitwan, 199,867 people, live in Bharatpur Metropolitan City. In 2015, the population of the metropolitan city grew to 280,502 (census 2015). Tandri, Khairini, Sauraha are the other populated towns of Chitwan. Sauraha is popular area for tourism due to the presence of Chitwan National Park.

Figure 7: Trend of population change in Chitwan



Source: Central Bureau of Statistics (2011)

## 2.7 Opportunities of the dairy sector in Nepal

Dairy sector in Nepal is growing gradually with the establishment of few commercial farms looking at the opportunities for the growing market. With the rapid urbanization and increased income of the people, the demand for dairy products is growing since last decade (NDDDB report, 2017). According to NDDDB report (2017), the annual milk production in Nepal is increasing by 3.4%. At present, the population growth in the Nepal is 1.4% per annum (CBS, 2012). Even with the same growth rate of population, the annual milk production has to be increased to 9% to meet the WHO recommendation of milk consumption (250 ml per day) by 2020.

The change in eating habits, increase in purchasing power of the consumers, change in demographic structure, rapid urbanization is the driving force for increasing demand for pasteurized milk, cheese, butter, ice-cream, ghee, yogurt, paneer and different types of milk based sweets in the urban areas (NDDDB report, 2012 and NDDDB report, 2017). In the present situation, the dairy industries are facing a deficit of 125,000 liters of milk in flush season and 225,000 liters of milk in lean season daily against the installed capacity (NDDDB report, 2013).

## 2.8 Marketing of dairy products in Chitwan

According to livestock statistics of Nepal 2015/16, about 2/3<sup>rd</sup> of the milk produced (30,230 MT) in the Chitwan district comes from buffalo whereas 1/3<sup>rd</sup> of the milk comes from cattle (14,947 MT). The milk produced in the Chitwan district is marketed through both the informal and formal route. The flow of milk from formal channel in the Chitwan district is 19% which is comparatively higher than the national average of 15 % (NDDDB report, 2013). The 77% of the milk processed is marketed as fresh pasteurized milk and 23% of the milk is used for making various dairy products (NDDDB report 2017). In Chitwan, the milk is either processed by the private processors or through cooperatives. They distribute the processed dairy products by themselves to different retailers like grocery shops, milk booths, supermarkets and some from their own retail outlets. DDC has private distributor for Chitwan who distributes dairy products produced from Hetauda, headquarter of Makwanpur district.

Rest of the milk produced (81%) in the Chitwan district is marketed through the informal route selling directly to the consumers or to the small tea and coffee shops, milk booth and milk hawkers. Farmers prefer to sell through the informal route because they get high pay compared to formal channel. Different towns of Bharatpur municipalities, Tandi, Sauraha, Khairini, Ramnagar, Munglin and Lothar are the big dairy markets in the Chitwan district (CBS, 2011).

## 2.9 Quality standard for milk and milk products

The quality standards for dairy product is set by DFTQC and presented in the table below.

Table 3: Quality standard of some of the dairy products set by DFTQC

S. No	Products	Minimum standards	Other standards
1	Pasteurized milk	3% Fat and 8% SNF	0 Coliform Count Negative phosphatase Test
2	Yogurt	4% Fat, 8% SNF, 18% TS	0 Coliform Count Negative phosphatase Test
3	Butter	80.0% Fat, SNF <2%, Moisture <18%	0 Coliform Count Negative phosphatase Test
4	Paneer	Moisture <70% Fat: >50 (DM basis)	0 Coliform Count Negative phosphatase Test
5	Cream	18% Fat	0 Coliform Count Negative phosphatase Test
6	Ghee	>99.5% Fat	RI at 40 °C: 1.4538-1.4559 Reichert Meissl Value: >28 Acid Value: <6 mg potassium hydroxide per 1 gm ghee Peroxidase Value: <10ml/kg Moisture: <0.05%

Source: DFTQC (2001) and NDDDB report (2013)

However, these quality standards are in rules and regulations but they are not applied (NDDDB report, 2013). Consumers are not aware of all these quality standard while buying of the dairy products but they look for freshness, taste, consistency and texture of the dairy products as quality standards (NDDDB report, 2013).

### Definition of terms

**Market access:** Market access is defined as increase trade. The result of increased trade will earn greater income growth (Hugo *et. al.*, 2006).

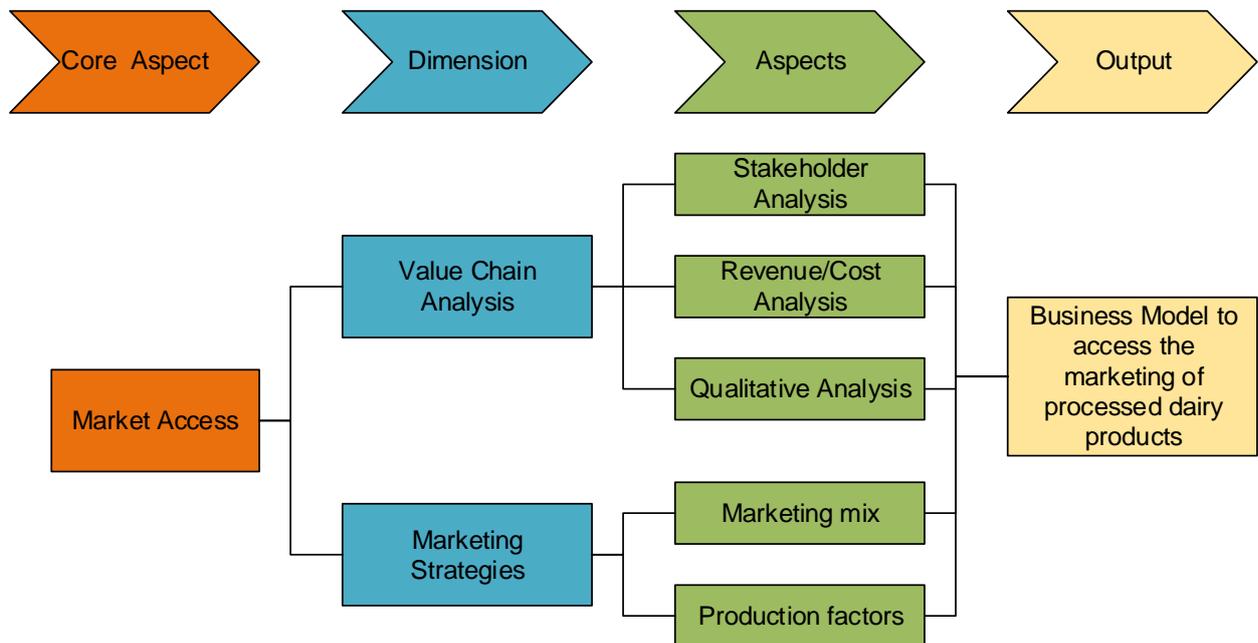
**Milk booth:** They sell both processed and unprocessed dairy products. They themselves make yogurt and paneer and sell in a loose packaging to the consumers. Also, the milk booth sells processed dairy products from different processors.

**Paneer:** Paneer is a type of cottage cheese which is similar to a soft cheese but not ripen and used for preparation of culinary dishes and snacks. It is made by pressing the coagulate of milk such that the moisture should not exceed more than 30% (Kumar *et.al.* 2014)

## 2.10 Conceptual Framework

The objective of this research is to find the strategies for market access to increase the sales of processed dairy products resulting to get higher profit margin to the ADPCL. Qualitative information collected from interviews, focal group discussion and observation was analysed by value chain analysis to discuss the stakeholders, cost and revenue involved in the dairy value chain of ADPCL and process of information flow and stakeholder relationship within the chain. The marketing strategies of the cooperative is analysed compared with its competitors and also by 6Ps of marketing mix. The final output of this research is to recommend the cooperative for improve market access of the processed dairy product by providing the different strategies in the form of business model and giving marketing strategies.

Figure 8: Conceptual framework



Source: Based on Rudunar (2007) concept on value chain development

### Chapter 3: Methodology

#### 3.1 Study area

The study was conducted on Chitwan district of Nepal. Chitwan district is located in the southern central part of Nepal which is bordered with Nawalparasi in the west, Makwanpur in the east, Parsa and India in South and Tanuhun, Gorkha and Dhading in the North. It is divided into 6 Municipalities and 1 Village Development Committees. Bharatpur is the head-quarter of the district. Chitwan district covers a total area of 2,239 Square Kilometer and has population of 579,984 (CBS, 2011).

Figure 9: Map of Chitwan showing bordering districts

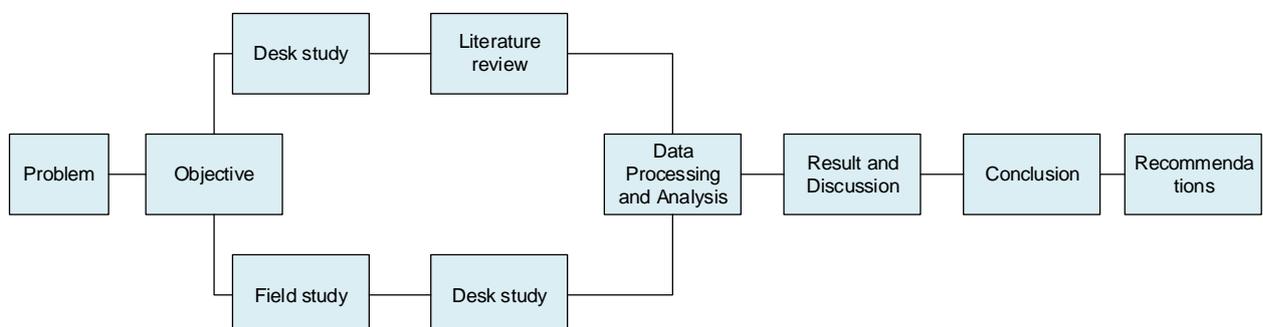


Source: Rural Access Program (2017)

#### 3.2 Research design

The research design has a qualitative approach which is based on empirical data, literature and documents. Desk research was done to gather relevant information and secondary data whereas primary data was collected through observation, focus group discussions and interviews with stakeholders involved in the dairy value chain. The secondary information was collected to know the dairying in Nepal and marketing system prevalent in the present condition and to compare the information with findings of the research. The purpose of interviews and focus group discussion was done with the stakeholders of dairy value chain to know the market opportunities and challenges of processed dairy products and to know the customer and consumer's need and requirement. It was done in order to develop the strategy to improve marketing and sales of ADPCL's dairy products.

Figure 10: Research design



Source: Based on conceptual framework (2017)

### 3.3 Data Collection

Secondary data was collected through the literature on situation analysis of dairying in Nepal and Chitwan during desk study. Primary data was collected in Chitwan through interviews and Focus group discussions with different stakeholders. Before going for the interviews and focus group discussion, discussion with Business Advisor of Agriterra and ADPCL team was done to select the stakeholders for interviews and focus group discussion in Agriterra office, Kathmandu. As ADPCL is aware of the Chitwan market, they were asked for the facilitation in the selection of 6 retailers, 3 retailers selling ADPCL dairy products and 3 retailers not selling ADPCL dairy products, 2 institutional consumers (1 from security force and 1 hospital canteen) and participants for focus group discussion. The selection of retailers based on selling or not selling ADPCL dairy products was done because it is easy to get the information about the competitor's proposition, competitors' strength and weakness which can be compared with ADPCL's proposition. The information about competitors helps to develop the strategies for ADPCL to get the competitive advantage.

#### Desk Research

Literature review on current developments in dairy sector in Nepal and review of the scoping reports, assessment report of the ADPCL was done during proposal development.

#### Focus group Discussion

Focus group discussion (FGD) was done to analyse the challenges of small dairy processors to sell their products on the market and also the strategies to be taken by them to improve the market access. ADPCL is taken as an example of a small dairy processor. The discussion was done to identify the weaknesses of ADPCL in the marketing of milk. Participants for FGD is presented in table 2. Statement and questions were presented to the participants for discussion. The outcome of the discussion from FGD was transcribed and analysed by comparing with interview results.

Table 4: List of participants of Focus group discussion

S. No.	Type of participants	Number	Remarks
1	ADPCL cooperative	2	Director, marketing officer
2	Retailers	4	Two selling ADPCL product and other 2 not selling ADPCL products
3	Representative from DLSO	2	Veterinary Officer and service center chief
4	Representative from other dairy processors	1	Absent
5	Representative from Agriterra	1	Business Advisor

Source: Stakeholders of dairy value chain in Chitwan

#### Interview with stakeholders of ADPCL

A face to face interview with stakeholders of ADPCL was conducted on the dairy value chain of Chitwan district. The interview was conducted with the cooperative chief, General Manager and Marketing Manager twice in order to triangulate the information collected from the field. The General Manager and Marketing manager of the cooperative of ADPCL was interviewed to obtain in-depth information on the dairy value chain. Also the interview was focus on revenue, costs and risk transmission distribution among the actors in the dairy value chain.

#### Interviews with retailers

Altogether 6 retailers who sells the dairy products within Chitwan district were selected based on the dairy products they sell (3 retailers selling of other processors' dairy products and 3 retailers selling

ADPCL's products). Information about the product demand, margin of selling of products, risks they faced while selling the products, expectation from them about the milk and milk products was collected.

*Table 5: Details of retailers selected for interview*

S. No.	Name and address of Retailers	Type of retailers	Selling ADPCL dairy products
1.	New Archana Suppliers, Bharatpur – 10, Chitwan	Grocery shop	Yes
2.	K. P Suppliers, Bharatpur – 11, Chitwan	Grocery shop	Yes
3.	Hamro Saptagandaki Supermarket, Bharatpur – 10, Chitwan	Supermarket	Yes
4.	Shop and Go Departmental Store, Bharatpur – 2	Supermarket	No
5.	Bhaisnav Sweet Shop, Bharatpur -10	Sweet shop	No
6.	Bharati Kirana and Dairy Suppliers Sauraha – 13, Chitwan	Grocery shop	No

#### **Interview with Institutional Consumers**

The study also considered 2 institutional consumers, 1 security force camp, Nepal Army and 1 hospital canteen (Canteen of Chitwan Medical College) for interview. They were interviewed for consumption pattern of dairy products in their diet, quantity and type of dairy products they are consuming.

#### **Interview with other Processors**

One big dairy processor, Dairy Development Corporation (DDC), processing more than 10,000 litres of milk per day and one medium dairy processor, Nepal Multi-Purpose Cooperative Dairy (NMC dairy) processing less than 10,000 litres of milk daily was selected. The interview was focused on the products they supply, marketing channels of their products and constraints they faced in marketing.

#### **Interview with Government and Non-government stakeholders**

The study was carried out to the government and non-government sectors who are supporting to cooperative dairy. Interview was conducted to Veterinary Officer only due to the absence of Office chief and planning officer of District Livestock Service Office (DLSO) and Business Advisor of Agriterra about the support they can do for the small dairy processors.

### **3.4 Data Analysis**

The information collected from different interviews, focus group discussion and observation was first processed into a transcript. The findings on marketing strategies of ADPCL is compared with competitor's strategies and with literature. The qualitative information was analysed using value chain mapping, stakeholder analysis, SWOT analysis and different marketing strategies are presented and analyzed to construct an efficient business model. The value chain mapping will help in analyzing the different stakeholders and their roles. SWOT analysis is done to analyse the internal and external factors supporting and hindering the marketing of processed dairy products and CANVAS business model will be used to analyse the possibility for new business model development.

## Chapter 4: Findings

### 4.1 Characteristics of retailers selling dairy products in Chitwan

The study found that the processed dairy products are retailed by the small grocery shops, milk booths and supermarkets in Chitwan. Sweet shop utilizes a very good amount of milk for making different milk based sweets. The characteristics of the retailers selling dairy products in Chitwan is presented in the table below.

Table 6: Characteristics of retailers selling dairy products in Chitwan

S. No	Type of retailers	Characteristics	Quantity of dairy products they sell in range per day	Quality requirement	Type of dairy products they sell
1	Grocery shop	Sells both grocery items, some daily use household items and dairy products	20 -200 liters of dairy products	Processed and packaged dairy products.	Pasteurized milk Yogurt, Paneer, ghee
2	Supermarket	Bigger than grocery shop and sells both grocery items, some daily use household items and dairy products	60 -200 liters of dairy products	Processed packaged dairy product having brand on it.	Pasteurized milk, yogurt, paneer, ghee, cheese, butter
3	Milk booth	Small shop supplies dairy products only.	20 -150 liters of dairy products	Both processed and unprocessed dairy products. Packaged and loose dairy products.	Pasteurized and raw milk Yogurt, ghee, butter
4	Sweet shop	Vegetarian restaurant supplies snacks and milk base sweets	800 -1000 liters of dairy products	Raw milk with more than 15% total solid	Milk based sweets, yogurt

Source: Interviews with retailers

#### 4.2 Characteristics of institutional consumers in Chitwan

The study revealed the type and quantity of dairy products used in hospital canteen and army barrack which is presented in the table below.

Table 7: Characteristics of institutional consumers in Chitwan

S. No	Type of institutional consumers	Characteristics	Quantity of dairy products they consume in range per day	Quality requirement
1	Hospital canteen	Supplies snacks, tea, coffee, milk and yogurt to the patients, caretakers of patients and hospital staffs	150 -200 liters of dairy products	Thick milk (can make more cups of tea)
2	Army barrack	250-300 soldiers stays in barrack and eat their meals in mess together	Supplies milk in 200 ml can from central office. Supplies 43 ml per soldier per day	Packaging of milk should be in a tin can of 200 ml stable in room temperature.

Source: Interview with institutional consumers

#### 4.3 Marketing channels for distribution of dairy products

The marketing channels used for distribution of dairy products is different according to processors. DDC and NMC dairy have a similar type of distribution channel while ADPCL uses only 1 channel for distribution.

Table 8: Marketing channels used by different processors

S. No	Processors	Distribution channel used for supply of dairy products	Place of distribution in Chitwan district	Remarks
1	ADPCL	<ul style="list-style-type: none"> <li>• Distribution by itself to retailers</li> <li>• Own retail outlets</li> </ul>	<ul style="list-style-type: none"> <li>• Different towns of Bharatpur metropolitan city and some part of Gaidakot Municipality (Nawalparasi)</li> </ul>	<ul style="list-style-type: none"> <li>• Uses 3 routes for distribution.</li> </ul>
2	DDC	<ul style="list-style-type: none"> <li>• Distribution by itself</li> <li>• Distribution through private distributors</li> <li>• Franchise shop</li> <li>• Own retail outlets</li> </ul>	<ul style="list-style-type: none"> <li>• Most of the big towns of Chitwan district. Different towns of Bharatpur, Khairini, Sauraha, Lothar and Gaidakot</li> </ul>	<ul style="list-style-type: none"> <li>• Distribution by only private distributors in Chitwan district.</li> </ul>
3	NMC dairy	<ul style="list-style-type: none"> <li>• Distribution by itself</li> <li>• Distribution through private distributors</li> <li>• Franchise shop</li> <li>• Own retail outlets</li> </ul>	<ul style="list-style-type: none"> <li>• Different towns of Jhapa, Morang, Sunsari and Illam</li> </ul>	<ul style="list-style-type: none"> <li>• Does not distribute dairy products in Chitwan.</li> </ul>

Source: Interview with dairy processors

#### 4.4 Competitors portfolio

Based on the information collected through interviews with the retailers, the portfolio of 4 different processors is prepared. The retailers of Chitwan milk and milk booth denied giving the cost price of the dairy products.

Table 9: Comparison of cost and selling price of dairy products from 4 different processors

Categories		DDC			ADPCL		Chitwan Milk	Milk booth
		Selling price	Cost price	Ranking	Selling price	Cost price	Selling price	Selling price
		Rs/unit	Rs/unit		Rs/unit	Rs/unit	Rs/unit	Rs/unit
Pkg. Milk	500ml	32	30.9		32	28.5	35	30
Yoghurt	500ml (pouch)	52	48	3 <sup>rd</sup>	45	37	50	40
	500ml (container)	65	61	1 <sup>st</sup>				
	1L (container)	120	113	2 <sup>nd</sup>				80 (pouch)
Paneer	1 kg	560	540	3 <sup>rd</sup>	600	530		550
	500 gm	290	270	2 <sup>nd</sup>			300	260
	200 gm	125	105	1 <sup>st</sup>	125	105	130	130
Ghee	500 ml- jar	400	394	1 <sup>st</sup>	460	430		
	1000 ml- poly	800	788	2 <sup>nd</sup>	900	850		

Source: Interview with retailers

Note: 1 Euro is equivalent to Rs 122

Based on the consumers' and customers' feedback on the products and services, the strength and weakness of 4 processors is presented in table form.

*Table 10: Comparison of strength and weakness of dairy processors based on consumers' and customers' feedback*

Dairy processors	Strength	Weakness
ADPCL	<ul style="list-style-type: none"> <li>▪ On time delivery and return policy</li> <li>▪ Good quality milk (thickness and no odour)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Major complaints in quality of yoghurt (yoghurt does not have a good texture)</li> <li>▪ Less number of product diversification</li> </ul>
DDC	<ul style="list-style-type: none"> <li>▪ High quality</li> <li>▪ Diversified products</li> <li>▪ Gained trust over the years</li> <li>▪ Longer existence in the market</li> </ul>	<ul style="list-style-type: none"> <li>▪ Broken marketing services</li> <li>▪ Non responsive to the complaints</li> </ul>
Chitwan Milk	<ul style="list-style-type: none"> <li>▪ Good delivery and return policy</li> </ul>	<ul style="list-style-type: none"> <li>▪ Major complaints in quality of yoghurt (yoghurt does not have a good texture)</li> </ul>
Milk booth	<ul style="list-style-type: none"> <li>▪ On time delivery</li> <li>▪ Guaranteed quality</li> <li>▪ Finds both processed and unprocessed milk</li> </ul>	<ul style="list-style-type: none"> <li>▪ No complaints</li> </ul>

Source: Interviews with retailers

#### 4.5 Consumers and Customer's needs and requirements

Based on the information collected from the interviews with the different retailers and focus group discussion, consumers use pasteurized milk mainly in making coffee and tea. Household use an average of 500 ml to 1500 ml of milk per day depending on the size of the family. Pasteurized milk is preferred for making tea and coffee because of the higher quality (thickness) that can be made more number of cups from it than raw milk. Raw milk is preferred for kids because it is considered healthy and nutritious than packaged pasteurized milk. Yogurt is mainly used by adults and children above 1 years. They believe yogurt helps in digestion and also creates an appetite. Paneer is used for making curry and mostly used by middle and high-end consumers. Vegetarian people compare paneer with the meat.

The needs and requirements of the customer depend per sales channel. Most of the retail outlets look profit, service and constant quality. The requirement per sales channel is presented in the table below.

*Table 11: Customers’ needs and requirement for dairy products*

Type of customers	Requirements
Grocery shop	<ul style="list-style-type: none"> <li>• Timely delivery of the dairy product, early morning. Some grocery shops prefer delivery also in the evening if they do not have enough cold storage facility.</li> <li>• Return policy for the dairy products if they are not sold in time before the expiry date.</li> <li>• Good margin in the selling of the dairy products.</li> </ul>
Supermarkets	<ul style="list-style-type: none"> <li>• Good packaging and branding in the dairy products.</li> <li>• Vacuum packaging of paneer.</li> <li>• Prefers to sell yogurt both in container and pouch.</li> <li>• Good margin in the selling of the dairy products.</li> </ul>
Sweet shop	<ul style="list-style-type: none"> <li>• Raw milk with high percentage of total solid (&gt;15%)</li> </ul>
Hospital canteen	<ul style="list-style-type: none"> <li>• Delivery of dairy products whenever requires</li> </ul>
Milk booth	<ul style="list-style-type: none"> <li>• Fresh unadulterated raw milk.</li> <li>• Good profit margin for processed dairy products..</li> </ul>
Army Barrack	<ul style="list-style-type: none"> <li>• Milk packed in tin having long expiry date.</li> </ul>

Source: Interview with retailers

#### 4.6 Challenges in buying and selling of dairy products by retailers

There are no big problems in buying dairy products from the dairy processors for all the retailers and institutional consumers. Most of the retailers sell the pasteurized milk to the consumers in the morning. The distributor also supplies the dairy products in the morning. The challenge is to calculate the exact volume of dairy products because the sales of dairy products are not constant every day and do not have sufficient cold storage facilities for storing of unsold dairy products.

The biggest challenge in the selling of the local dairy products is that consumers do not trust the local brand in terms of quality. Consumers prefer to buy the DDC products than other local brands due to the brand it has created since more than 18 years. The challenge faced by the different retail outlets is presented in the table below.

Table 12: Challenges in buying and selling of dairy products by retailers

Type of outlets	Challenges in buying	Challenges in selling
Grocery shop	<ul style="list-style-type: none"> <li>• Challenge in buying a big volume of dairy products due to an insufficient cold storage facility.</li> <li>• The shop adjacent to regular ADPCL outlet finds a challenge to buy ADPCL dairy products because the regular customer does not want a competitor nearby his shop.</li> <li>• Challenge to buy ADPCL dairy products in the evening if the shop is out of stock.</li> <li>• DDC cannot supply enough dairy products to meet the demand particularly in lean season and during festivals.</li> <li>• Challenge in buying ADPCL's ghee because ADPCL does not enough production to meet demand.</li> </ul>	<ul style="list-style-type: none"> <li>• Challenge in selling local brand of dairy products due to lack of trust in quality by the consumers.</li> <li>• Challenge in selling yogurt of ADPCL compared to DDC due to texture, consistency, and packaging.</li> </ul>
Supermarket	<ul style="list-style-type: none"> <li>• Challenge in buying vacuum packed paneer and yogurt in a container from ADPCL which has good demand from consumers.</li> <li>• DDC cannot supply enough dairy products to meet the demand particularly in lean season and during festivals.</li> </ul>	<ul style="list-style-type: none"> <li>• Challenge in selling local brand of dairy products due to lack of trust in quality by the consumers</li> <li>• Challenge in selling loose pack paneer.</li> </ul>
Hospital canteen	<ul style="list-style-type: none"> <li>• Challenge to buy a big volume of dairy products due to an insufficient cold storage facility to store.</li> </ul>	<ul style="list-style-type: none"> <li>• Challenge to estimate the selling volume of dairy products due to change in the number of consumers daily.</li> </ul>
Army Barrack	<ul style="list-style-type: none"> <li>• Challenge to buy dairy products locally because central body calls national tenders for the milk supply for the soldiers.</li> </ul>	

Source: Interview with retailers and institutional consumers

#### 4.7 Expectation from ADPCL by the retail outlets

Depending upon the type of outlets, they have their own type of expectations from ADPCL. The demand for different dairy products depends on the consumers' type and their requirements, the retail outlets expect to get from ADPCL to fulfill their requirements. The demand of vacuum packed

paneer and yogurt in a container is very high in all type of retail outlets. The expectations from the grocery shop, supermarket and hospital canteen are listed below.

*Table 13: Expectations from the retail outlets and institutional consumers from ADPCL*

Type of outlets	Expectations
Grocery shop	<ul style="list-style-type: none"> <li>• Delivery of dairy products should be done twice in a day, morning and evening due to lack of sufficient cold storage facilities</li> <li>• Expected to improve the texture of yogurt in pouch and production of yogurt in container of different volume (200ml, 500ml and 1000ml)</li> <li>• Pasteurized milk in different fat percentages; (Low-fat milk of 1.5% fat, standard milk 3% of fat and full fat-milk of 5% fat)</li> </ul>
Supermarket	<ul style="list-style-type: none"> <li>• Provision of cold storage facility from ADPCL so as to store the dairy products.</li> <li>• Expect to get paneer in vacuum packaging with brand/label on it and yogurt in a container of different volume pack as like groceries.</li> <li>• Pasteurized milk in different fat percentages; (Low-fat milk of 1.5% fat, standard milk 3% of fat and full-fat milk of 5% fat).</li> </ul>
Milk booth	<ul style="list-style-type: none"> <li>• Expects delivery of both processed and quality fresh raw milk from ADPCL. There are many consumers who only take raw milk for consumption.</li> </ul>
Hospital canteen	<ul style="list-style-type: none"> <li>• Expect to get delivery during day and evening from their retail outlets.</li> </ul>
Army barrack	<ul style="list-style-type: none"> <li>• Expect to produce tin packed milk and take part in the national tender call by the central office.</li> </ul>

Source: Interview with retail outlets and institutional consumers

#### 4.8 Suggestions for ADPCL to improve sales

To improve the sales of dairy products from ADPCL, following strategies were suggested from the focus group discussion and interviews.

- The marketing of ADPCL is not effective. All the 3 interviewed retailers, not selling ADPCL products complained that none of the staff from ADPCL has reached them for marketing. They advised ADPCL to become active in the market.
- It is suggested ADPCL to consider the consumers and customer's requirement by diversification and packaging of dairy products for the fulfillment of the requirement of different consumer's type.
- The focus group discussion advised ADPCL to open depot or own outlet at Bharatpur -12 where ADPCL does not have access till now.
- It is suggested to deliver the dairy products twice a day, morning and evening so that the grocery shops which do not have chilling facility sell more dairy products.
- The focus group discussion suggested to invest in promotion for the marketing of dairy products and also suggested to do door to door marketing, visiting big sellers and potential sellers to improve sales.
- The focus group discussion also suggested to concerned stakeholders for the promotion activities on the importance of consumption of processed dairy products.

#### 4.9 Marketing mix used by ADPCL

The 6Ps of marketing mix used by ADPCL is presented in the table below.

Table 14: Marketing mix used by ADPCL

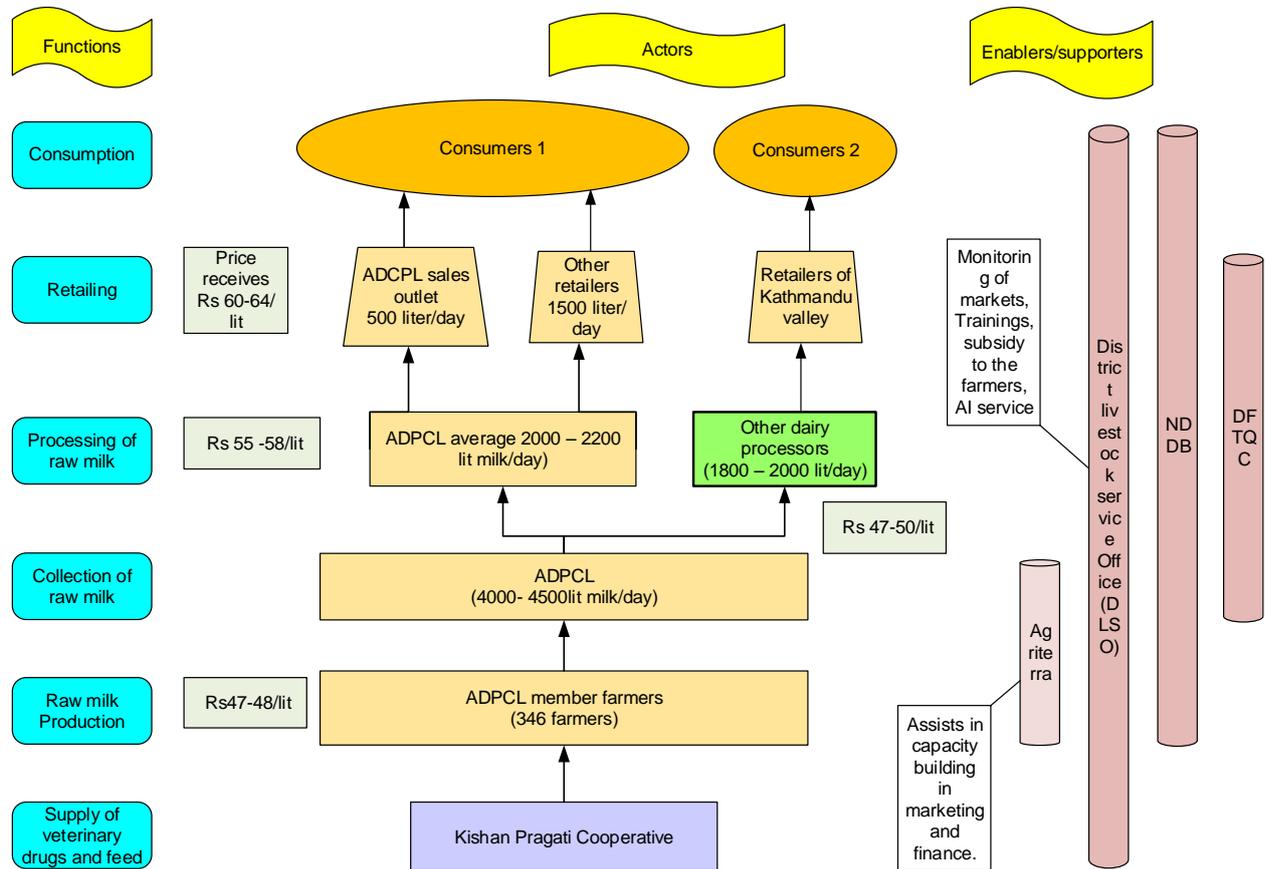
Product	<ul style="list-style-type: none"> <li>ADPCL is selling dairy products under the brand “Annapurna” pasteurized and homogenized milk, “Annapurna” yogurt, “Annapurna” ghee and paneer without branding.</li> <li>Pasteurized milk and yogurt are presented in plastic pouches of 500 ml and delivered in a hard plastic crate of 20 packs. Ghee is presented in a 500 ml and 1 liter plastic jar and paneer is presented in 200 gram and 1 kg plastic wrapping.</li> <li>ADPCL is following the government standard for production of pasteurized milk (3% fat and 8% SNF).</li> <li>ADPCL delivers its products to the retail outlets and has a provision of taking returns of the dairy products if those are not sold on time from retail outlets.</li> </ul>
Price	<ul style="list-style-type: none"> <li>ADPCL has set the price based on the milk quality (SNF and Fat) as mentioned by the National Dairy Development Board.</li> <li>Offer is given to the retailers on pasteurized milk, for instance, 1 pack (500 ml) is given free for every 20 packs that are sold per day.</li> </ul>
Place	<ul style="list-style-type: none"> <li>There are 132 retail outlets inside the Chitwan district and part of the Nawalparasi district for ADPCL dairy products.</li> </ul>
Promotion	<ul style="list-style-type: none"> <li>Very few activities are done to advertise its dairy products.</li> <li>Marketing is done by the means of personal relationships with the owners of the retail outlets. This is found to be effective.</li> <li>ADPCL has established one retail outlet for selling and promotion of its dairy products.</li> </ul>
People	<ul style="list-style-type: none"> <li>Small grocery shops, supermarkets and small dairy shops are the major customers of ADPCL. The dairy products are consumed by all class of people, mostly by the medium class and the higher class.</li> </ul>
Performance	<ul style="list-style-type: none"> <li>ADPCL has small market share in Chitwan’s market. ADPCL has objective to increase sales of the processed dairy product to get higher profit margin.</li> </ul>

Source: Interview with the General Manager and the Marketing Manager of ADPCL

#### 4.10 Value chain Analysis of ADPCL

Value chain map is drawn based on the information gathered from interviews with the cooperative chief, General Manager, and Marketing Manager. The overlays made is based on the information provided by them during the interviews.

Figure 11: Value chain map of ADPCL



Source: Interviews with the Director, the General Manager and the Marketing Manager of ADPCL

Note: 1 Euro = Rs. 122

##### 4.10.1 Stakeholder Analysis

The actors and supporters of ADPCL’s dairy value chain and their function in value chain and their role is presented in the matrix below.

Table 15: Stakeholder analysis of ADPCL's dairy value chain

Function in ADPCL's dairy value chain	Actors	Roles in value chain
Input supplying	Kishan Pragati Cooperative Limited	<ul style="list-style-type: none"> <li>Supplies concentrates to the dairy farmers at Rs28/kg.</li> <li>Supplies veterinary drugs and feed supplements like minerals and vitamins to the dairy farmers.</li> </ul>
Producing	346 Dairy farmers	<ul style="list-style-type: none"> <li>Farmers raise range of 2-22 milking cows for milk production with average production of 7-8 liter/animal/day.</li> <li>Supply milk to ADPCL every day and get paid by ADPCL</li> </ul>
Collecting	ADPCL	<ul style="list-style-type: none"> <li>Measures, chilling and storage of the milk supplied by 346 dairy farmers.</li> <li>Measures the quality (SNF and Fat%) and quantity (liter) of milk for payment to the farmers.</li> <li>Supplies half of the milk collected (around 2000 liter) for ADPCL processing unit and rest of the milk is supplied to 6 other processors in Kathmandu (DDC, Sitaram Dairy, Tulasha Dairy, Aadhunik Dairy, Kharipati dairy and Hetauda dairy)</li> </ul>
Processing	ADPCL	<ul style="list-style-type: none"> <li>Processing of milk for the production of milk, yogurt, ghee and paneer.</li> </ul>
Distribution/Wholesaling	ADPCL	<ul style="list-style-type: none"> <li>Distribution of processed dairy products in 3 routes of Bharatpur Metropolitan City, (route to Ramnagar, Jugedi, route to Naurangi, Bhojhad, Devghat and route to Krishnapur, Narayanghat, Gaidakot) by itself to 132 retail outlets.</li> </ul>
Retailing	132 retail outlets (Supermarkets, grocery shops and milk booths)	<ul style="list-style-type: none"> <li>These retailers sells ranges from 20 liters to 200 liters of processed dairy products.</li> </ul>
Consuming	Consumers (local people living nearby shops, students and medical personnel)	<ul style="list-style-type: none"> <li>Pasteurized milk and yogurt is consumed by all type of consumers.</li> <li>Paneer and ghee is consumed by middle and high-end consumers.</li> </ul>

Supporters	Roles
District Livestock Service Office (DLSO), Chitwan	<ul style="list-style-type: none"> <li>• Provides training on clean milk production, dairy product diversification, vaccination for cattle and market monitoring to dairy farmers, collection center and processors.</li> <li>• Provides subsidy on Artificial Insemination (AI) to the farmers.</li> <li>• Gives 50 to 75% subsidy on purchases for the processing unit based on the proposal of the processor.</li> <li>• Monitoring of the market for quality coordinating with other government stakeholders but is not frequent and effective.</li> </ul>
National Dairy Development Board (NDDDB), Nepal	<ul style="list-style-type: none"> <li>• Top level policy-making body for dairy development in Nepal.</li> <li>• Develops and advocates policies on the import and export of attributes necessary for the production and promotion of milk and milk products, animal feed, and speeds up the implementation of approved policies.</li> <li>• Formulates and recommends the pricing policy of milk to the Nepalese Government.</li> <li>• Advises the Nepalese Government on the prosperity of dairy professionals and consumers.</li> </ul>
Department of Food Technology and Quality Control (DFTQC)	<ul style="list-style-type: none"> <li>• Food safety and Quality control through food inspection, food standardization and harmonization, certification</li> <li>• Food Technology Development and Training through research and development activities in food processing technologies, consultant services to food industries.</li> <li>• Food and Feed Analytical Services through laboratory analysis of various food and food products, analysis of feed and feed ingredients</li> <li>• Food and Nutrition Development through development, updating and composition of food composition tables, conducting food and nutritional surveys.</li> </ul>
Agriterra	<ul style="list-style-type: none"> <li>• Assists in strengthening cooperatives by providing advice</li> <li>• Advises are given in making investment plans, sharpening the business strategy and optimizing the production, processing and marketing activities through training by experts and through sharing knowledge and exchanging experiences.</li> </ul>

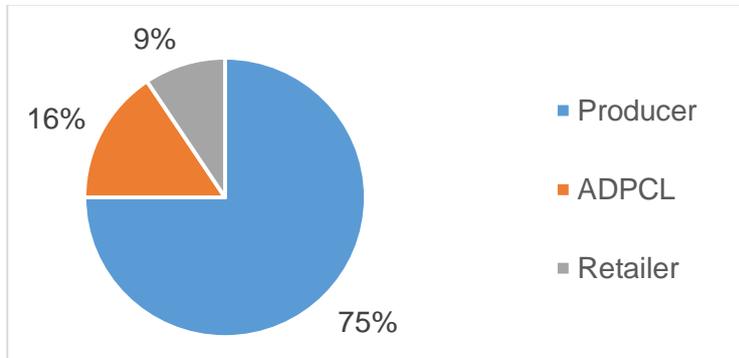
Source: Interviews with the Cooperative chief, the General Manager and the Marketing Manager

#### 4.11 Quantitative Analysis

##### 4.11.1 Value share by different chain actors

Producers take the highest value share of 75%, followed by ADPCL, 16%, and least by the retailers who share 9% value in pasteurized milk of ADPCL. The calculation of value share is shown in annex 2.

Figure 12: Value share by different actors in pasteurized milk

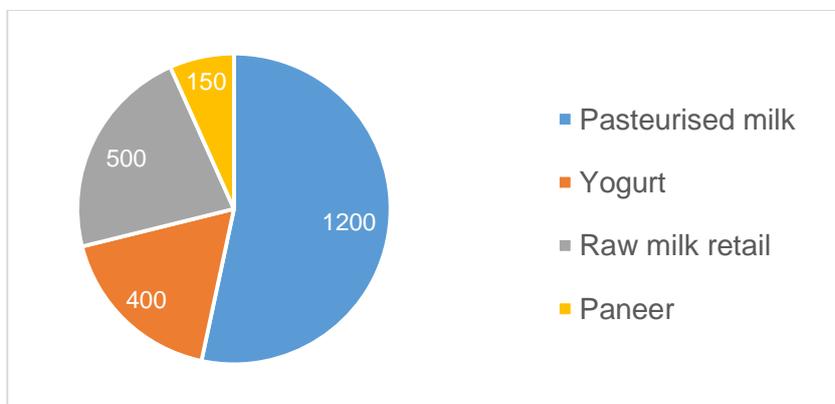


Source: Interviews with the General Manager and the Marketing Manager

##### 4.11.2 Volume of milk used for Processing by ADPCL

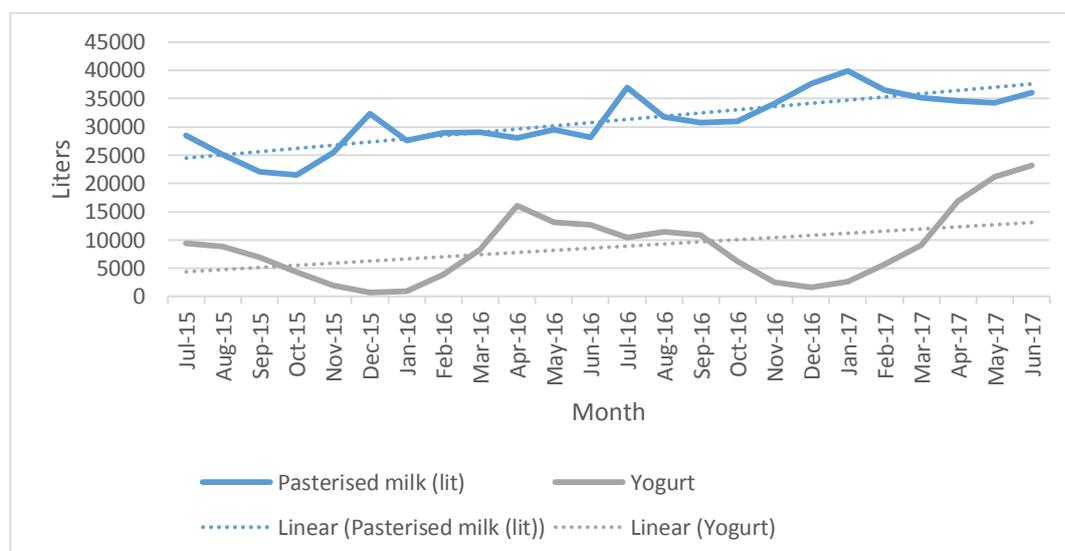
The milk volume used by ADPCL for processing is in increasing trend. Comparing the record of milk processed last year to this fiscal year, there is increase in 28% and 32% sales of pasteurized milk and yogurt respectively. In daily average processing, more than half of the milk processed into pasteurized milk (1200 liters), followed by yogurt (400 liters), paneer (150 liters). It also retails 250 -500 liters of raw milk depending on the seasons from its own outlet.

Figure 13: Volume of milk (liters) used for product diversification



Source: Interviews with the Cooperative chief, the General Manager and the Marketing Manager

Figure 14: Trend of sales of pasteurized milk and yogurt of ADPCL



Source: Interviews with the Cooperative chief, the General Manager and the Marketing Manager

#### 4.11.3 Profit margin of ADPCL in different dairy products

Paneer has the highest profit margin per unit product compared to other dairy products produce by ADPCL. But if it is compared with the total profit of a year, pasteurized milk gives the highest profit followed by yogurt because of the volume of milk used for the production of pasteurized milk is more than double of yogurt. The calculation of profit margin per unit product is presented in annex 3.

Table 16: Profit margin per unit dairy product of ADPCL

Profit margin per unit (Rs)	
Pasteurized milk (1 liter)	3.45
Yogurt (1 Liter)	7.06
Paneer (1 kg)	49.21
Raw milk for retail (1 liter)	2.70
Raw milk to other processors (1 lit)	1.0

Note: 1 euro = Rs 122

Source: Interviews with the Cooperative chief, the General Manager and the Marketing Manager

#### 4.12 Qualitative Analysis

##### 4.12.1 Market information flow

The salesmen collect the information from the market. The supply of the dairy products to the retail shops or stores is not uniform. Each day, the salesmen collect the information from the retailers on quantity required. Retailers act as mediator for exchange of information between ADPCL and consumers. The dairy consumers complain to the retailers and retailers complain to the processors through salesmen or directly by telephone to the Marketing manager. While the information of

correction on the complaints is informed through the salesmen and sometimes by the manager if the complaint is very serious.

#### 4.12.2 Relationship between the actors with the value chain

ADPCL has maintained good relationship with the producer farmers. Each day farmers come to collection center which is adjacent to processing unit to deliver the milk. They can chat with each other and also with board members about the progress of cooperative. The collection center and processing center is managed by the separate managerial group. The managerial group managed the record of milk volume and decide the volume for processing and marketing. The payment of the farmers are done after every 15 days according to the volume and quality of the milk they supply. The farmers also get extra bonus and dividend based on the percentage contribution on supply every year. The managerial group are in close contact with board members and they have to present the progress every month to the board members.

There is good personal relationship between ADPCL and the retailers. However, there is no formal contract on volume, price and quality between them. The sales and marketing is done based on word of mouth and personal contact. ADPCL substitutes the dairy products if there is any breakage, spoilage or dairy products which is not sold by retailers on time. ADPCL value its retailers by rewarding them every year based on the volume they sell.

#### 4.13 Internal Analysis

##### 4.13.1 Processing facility present for product diversification

ADPCL has processing facility for making pasteurized milk, yogurt, paneer and ghee. ADPCL has hot room for making yogurt and cold room for storage of processed dairy products. ADPCL does not have the vacuum packaging machine for packing paneer.

*Table 17: Available facility for milk processing and the capacity utilized*

Dairy products and facility	Capacity per day	Packaging facility	Capacity utilized
Pasteurized milk	4000 liter	500 ml pouch packaging	31%
Yogurt	3000 liter	500 ml pouch packaging	13%
Paneer	80 kg	200 gm and 1kg plastic wrapping	31%
Ghee	20 kg	500 ml plastic jar (bottle)	50%
Incubation room for yogurt	2500 liter		16%
Cold room for packaged milk, yogurt, paneer	11 ton		18%

Source: Interviews with the Cooperative chief, the General Manager and the Marketing Manager

##### 4.13.2 Management team of ADPCL and their responsibilities

ADPCL has 11 member managerial team working full time in different departments; collection, processing, marketing and sales department. The team and their roles is presented in the matrix below.

Table 18: Details of management team and their functions

Position	Number	Functions	Remarks
General Manager (GM)	1	<ul style="list-style-type: none"> <li>Manages the staffs and plant, Keep eyes on process and planning for the market development.</li> </ul>	Does the work of accountant as well because the accountant position is vacant.
Accountant	1	<ul style="list-style-type: none"> <li>Manages the accounts of the collection, processing and own retail outlets</li> </ul>	Vacant
Storekeeper	1	<ul style="list-style-type: none"> <li>Keep the record of inbound and outbound logistics.</li> </ul>	
Collection head	1	<ul style="list-style-type: none"> <li>Manages the collection center, keep record of milk collection of every farmers.</li> </ul>	
Production head	1	<ul style="list-style-type: none"> <li>Calculation of the milk required for processing according to demand from market.</li> </ul>	
Marketing manager	1	<ul style="list-style-type: none"> <li>Collects the market information from the salesmen. Calculation of dairy products according to information and provide to production head.</li> <li>Very infrequently goes for marketing of dairy products in new clients.</li> </ul>	Does not seem active in marketing of dairy products. The retailers not selling ADPCL complain that they have not seen him in their outlets.
Salesman	5	<ul style="list-style-type: none"> <li>Distribution of dairy products to 132 outlets daily.</li> <li>Collection of demand and complaint from outlets and forwarded to marketing manager.</li> </ul>	

Source: Interviews with the Cooperative chief, the General Manager and retailers

#### 4.14 SWOT analysis of ADPCL

Based on the findings derived from interviews, focus group discussion and from observations, the strength, weakness, opportunities and threats of ADPCL are summarized in SWOT below.

Table 19: SWOT analysis of ADPCL

Strengths	Opportunities
<ul style="list-style-type: none"> <li>ADPCL has a processing facility with a maximum capacity of 7000 liter milk per day.</li> <li>All the members of ADPCL are milk producing farmers. So they are serious in the supply of quality milk and on the income of the cooperative.</li> <li>Constant supply of the milk from the member farmers round the year.</li> <li>ADPCL has its own retail outlet for selling of the processed dairy products which can be used for promotion of its dairy products.</li> <li>ADPCL is currently known for the high quality of milk supplier.</li> </ul>	<ul style="list-style-type: none"> <li>The consumption of milk in the district is increasing with the growing population in the district due to in migration from other districts.</li> <li>The demand for premium dairy products like paneer, ice cream, and yogurt in a cup is also growing due to increasing income of the people.</li> <li>The opening of new coffee shops, supermarkets, hospitals and education institutes are creating more demand for dairy products.</li> </ul>
Weaknesses	Threats
<ul style="list-style-type: none"> <li>ADPCL does not have specialized marketing person who could give enough time on market for the promotion and marketing of their dairy products.</li> <li>ADPCL does not have a good packaging for paneer. Supermarkets prefer vacuum packed paneer having a brand on it.</li> <li>The promotional activities for marketing and sales for ADPCL dairy products is not much effective.</li> </ul>	<ul style="list-style-type: none"> <li>Large dairy processors are in line to penetrate the same market.</li> <li>Young people are not interested in dairy farming. Continuity of farming is in danger after this generation.</li> <li>ADPCL does not have separate quality control department or lab for quality test except SNF and fat percentage but they claim their dairy products as quality products.</li> </ul>

Source: Based on interviews with stakeholders of ADPCL and observations

## Chapter 5: Discussion

ADPCL is playing the role of collector, processor, distributor, and retailer in a dairy value chain. It collects on average 4000 liters milk from its 346 member farmers. Although the cooperative has the capacity to process all the milk collected but currently, it could not process all because of not getting access to a market for all processed products. The study investigated the challenges and opportunities for ADPCL in order to improve the sales of processed dairy products by interviewing the retailers, supporters and internal analysis of ADPCL.

ADPCL is benefitting the member farmers by taking the role to link them to the market and also adding value to the milk produced. However, the cooperative is currently not able to add value to all the milk collected. The member producer always has an expectation to get a higher price for their milk supply. In Rota and Sperandini (2010) study, they found that in developing countries, the economic and institutional barriers to the marketing of livestock and livestock products restrict the growth of the livestock sector which consequently has a negative impact on the income and livelihood of smallholder producer farmers. However, ADPCL is not facing problem to an institutional barrier for improvement but is not able to do big investment like other big processors for the development of cooperative. For the development of the dairy sector in Nepal, Nepal Government has promotion program for the establishment and support to the dairy cooperative.

The needs and requirements of consumers and customers are found different according to their type as shown in table 11. According to Burnett (2008) and Baker (2003), the needs and requirements of the consumer and customers are important for collecting market information. ADPCL has recruited a Marketing Manager and 5 salesmen for marketing and selling of the dairy products. They are rather active in the selling of the dairy products but very less focused on marketing. They collect the information of sales and volume demanded by the regular customers but has not done market research to study the other needs and requirements of customers and consumers. Also, the challenge for ADPCL is not have enough ideas to translate the needs and requirements of customers and consumers. The salesmen are only active on the regular market for distribution of the dairy products on a daily basis but they do not have sufficient time to meet potential clients, go to new areas for getting market information and also lacks marketing skills. The action of marketing manager recruited by ADPCL does not look active in the market. There is no other staff of ADPCL working in marketing and collecting information from the market. It is supported by FAO, (2001) study on market information that market information is required in all levels of value chain before deciding on the process and marketing of the dairy products. This will enable the processors to supply the goods in the right form, volume, place and time.

The sales of pasteurized milk and yogurt of ADPCL is increased by 28% and 32% respectively compared to last year (figure 14). This is supported by the report of DLSO Chitwan (2016) that the consumption of processed dairy products in the Chitwan district is increasing every year and also the trend of population increase in the Chitwan district is very high which is presented in figure 7 (CBS, 2011). This is an opportunity for ADPCL to study their requirements. Also, ADPCL is selling its products only in Bharatpur Metropolitan City, however, has not investigated the market potential in other neighbouring towns of the district. Interviewing with one of the retailers of Sauraha, the retailer is selling more than 150-200 liters of processed dairy products daily but ADPCL has not shown its presence there. It is an opportunity for ADPCL to penetrate potential new markets which is near from their processing unit where it has not marketed till now. According to CBS, (2011), besides Bharatpur

metropolitan city, there are other potential end markets in Chitwan for the processed dairy products like Tandj, Sauraha, Munglin, and Khairini.

ADPCL is distributing the dairy products by itself to different retailers of Bharatpur Metropolitan City and some part of Gaidakot Municipality, Nawalparasi. In contrast to ADPCL, DDC and NMC dairy use more than 1 channel for the distribution of dairy products (table 8). Being the small processor, ADPCL does not have enough resources for the marketing and distribution of the dairy products in new place. The difference in the profit margin of selling raw milk and processed milk of ADCPL is at least Rs 2.45 (margin of selling pasteurized milk – margin of selling raw milk to other processors) and in average more than Rs 4.39 per liter of milk (refer to table 16 and annex 4). It is an opportunity for ADPCL to sell more processed dairy products even by hiring private distributor initially for the new location who can do both marketing and distribution of the dairy products and share margin between distributor and ADPCL.

Despite the opportunities for ADPCL, there are also challenges in the marketing of the dairy products. DDC and milk booths are the major competitors for the ADPCL dairy products. According to NDDB report, (2017), around 81% of the milk sold in Chitwan is by informal route while in formal chain, DDC has been selling its dairy products for more than 18 years in Chitwan and established its brand. This is supported by Lee *et.al.* (2014) study that in the formal channel, large-scale dairy enterprises with modern processing facilities dominate the market. These type of processing plants operate on government fixed prices. Nevertheless, there is much weakness of DDC which might be the opportunity for ADPCL to enter the market. The broken marketing service and irresponsive to the complaints from customers are the weakness of the DDC. ADPCL can take the advantage of weakness of competitors to enter the market.

The most of the retailers expect dairy products like yogurt in plastic container/cup and vacuum packed paneer from ADPCL (refer table 13). The already available facility of incubation room (hot room) for making yogurt which is not fully utilized and also has a cold room for storage of the yogurt (refer to table 17) is an opportunity for ADPCL. The only investment required is in buying container and rack for the holding the containers in storage and during transportation of yogurt. However, the production of yogurt in container may decrease the sales volume of regular yogurt but in total the sales volume will be increased for yogurt.

The vacuum packed paneer has also got good demand from the market mostly from the supermarket and some grocery shops (refer to table 13). ADPCL currently has the basics for preparation of paneer and is underutilized but only the vacuum packaging machine is not available (refer to table 17). Also, paneer has good profit margin per unit product sale (refer to table 16). This is an opportunity for ADPCL to sell more paneer in the supermarket if ADPCL can supply it in vacuum packed. However, the challenge is to invest in purchasing of vacuum packaging machine and time for return on investment.

It is observed that the opening of many coffee and tea shops in different towns of Bharatpur Metropolitan City. These shops use good quality packaged milk for making tea and coffee. On a daily basis, around 70 percent of the milk used for processing by ADPCL is for the production of pasteurized milk (refer to figure 14). It is an opportunity for ADPCL having good quality milk (thickness) to deal with those kinds of shops to increase selling their dairy products.

The retailers get comparatively higher profit margin by selling dairy products of ADPCL than selling dairy products from DDC (refer to table 9). One of the requirement to sell the dairy products by the retailers is the profit margin (refer to table 11). It is an opportunity for ADPCL to market its dairy products to those retailers because of having a higher profit margin and good quality compared to the competitors. The study could not able to compare the profit margin with Chitwan milk and milk booth because retailers denied to disclose it.

### Business model used by ADPCL

The business model used by ADPCL is shown in CANVAS business model. ADPCL is working from collection to marketing and distribution function in a dairy value chain.

Table 20: Business model used by ADPCL (presented in CANVAS business model)

<b>Key Partners</b> Kishan Pragati Cooperative for distribution of feed, veterinary drugs and feed supplements to the member farmers.	<b>Key Activities</b> <ul style="list-style-type: none"> <li>Collection and chilling of milk from the member farmers.</li> <li>Processing and distribution of dairy products.</li> <li>Delivery of the processed dairy products every-day to the retail outlets.</li> </ul>	<b>Value Proposition</b> <ul style="list-style-type: none"> <li>No specific proposition.</li> <li>Committed to quality standard mentioned by NDDDB (3% fat and 8% SNF in pasteurized milk)</li> </ul>	<b>Customer relationship</b> <ul style="list-style-type: none"> <li>Good personal relation.</li> <li>Complain about dairy products is forwarded to the cooperative through salesmen every-day.</li> <li>Regular visit to the retail outlets by the marketing manager.</li> </ul>	<b>Customer Segment</b> <ul style="list-style-type: none"> <li>Milk and yogurt are used by all customer segments.</li> <li>Ghee and paneer are used mostly by the middle and high-class consumers.</li> </ul>
	<b>Key Resources</b> <ul style="list-style-type: none"> <li>Has chilling facility for storage of milk</li> <li>Processing facility for pasteurized milk, yogurt, cream separator, ghee, paneer.</li> </ul>		<b>Channels</b> <ul style="list-style-type: none"> <li>Direct selling of dairy products to 132 retailers.</li> <li>Retailing through its own outlet.</li> </ul>	
<b>Cost resources</b> <ul style="list-style-type: none"> <li>Buying of milk from the member farmers.</li> <li>Processing cost of milk.</li> <li>Distribution cost of processed dairy products.</li> <li>Salary of the staff.</li> </ul>			<b>Revenue Streams</b> <ul style="list-style-type: none"> <li>Selling of processed dairy products.</li> <li>Selling of chilled raw milk to other processors.</li> </ul>	

**Source:** interview with General Manager and marketing manager

### **Limitations of the study**

- The study was proposed to study the market potential in Gorkha district but it was not able to do it because of the road blockade due to the landslide.
- During Focus group discussion, the representative from other dairy processors was absent so unable to put his views during the discussion.
- Milk booth and retailer of Chitwan milk in Sauraha denied sharing the buying price of dairy products which limits the comparison in the margin with ADPCL.
- The study had not studied the exact volume that could be increased, and cost and benefit after altering in marketing strategies and investment.

## Chapter 6: Conclusion and Recommendation

The objective of this thesis is to develop an effective marketing strategy for the ADPCL to process all the milk collected from its member farmers in order to get the high-profit margin to distribute back it to member farmers. The answer to two main research questions will help in developing the strategy for ADPCL; 1. Challenges in the marketing of the dairy products and 2. What marketing strategies can be adopted by ADPCL to improve the selling of dairy products?

### 6.1 Conclusion

Based on the interviews with the ADPCL cooperative chief, General Manager, Marketing Manager, salesmen, retailers, consumers and observations, it is concluded that there is a considerable demand of premium dairy products in the market of Chitwan and has many opportunities to improve the market access of ADPCL dairy products. However, there are still challenges seen for ADPCL to increase the sales in present conditions.

A very big challenge for ADPCL is that it does not have clear marketing strategies for selling of their dairy products. However, the cooperative has kept a good personal relationships with their regular clients for selling dairy products. The sales technique used is word of mouth but also their presence in the current and new market for promotion is very low for marketing.

The marketing role separated by ADPCL to marketing manager is quite controversial. His title is marketing manager but his tasks do not include marketing activities. In addition, the salesmen are mostly responsible for the delivery of the dairy products to their regular customers and collect information on volume and complaints from them. They do not have enough time to acquire new customers or set up marketing activities.

ADPCL has not done research on its competitors, their strength and weakness. It is important to know the proposition of competitors in order to make strategy to get competitive advantage. For instance the paneer of DDC has high demand in the market due to its packaging and branding. Consumers are ready to pay high for the yogurt of DDC due to its consistency and taste. ADPCL has been missing this opportunities of selling this type of products.

ADPCL has been processing the milk but the challenges are it produces only a few types and packaging sizes of dairy products. The cooperative produces pasteurized milk, yogurt, paneer and ghee as regular dairy products. However, the demand for yogurt packaged in a container of different volumes and vacuum packed paneer is high on the regular market. This is an opportunity for ADPCL to access its dairy products to those retail outlets. The challenge is to have an investment in the packaging machine and containers for packaging. It is important to analyse the cost benefit and IRR before the investment.

ADPCL has invested only slightly in the promotion of their dairy products in the market. They have distributed some hoarding boards to few retailers and they were not clearly visible due to different board sizes and also not consistent in using their brand. Moreover, the cooperative has missed the opportunity to promote its processed dairy products through audiovisual media like local television, radio, newspaper or hoarding board in town. While the selling of the pasteurized milk, ADPCL has provided the offer of 1 packet free for selling every 20 packets per day to the retailers. This type of offer is not valid for other milk products except the pasteurized milk. Furthermore, big retailers are demanding refrigerator to store and sell more quantity of dairy products. It is an opportunity for ADPCL to calculate the cost and revenue earned by selling the dairy products in those outlets.

The distribution channel used by ADPCL is distributing its dairy products by itself. It has limited resource for the distribution of dairy products to the market. It is concentrated only in the Bharatpur Metropolitan City of Chitwan but missed the opportunities to sell in other potential towns of Chitwan.

There is an opportunity for ADPCL to access the market in other towns by hiring the distributor like DDC. However, the challenge is to hire the distributor and also to negotiate on margin and volume.

ADPCL has maintained the record of costs and revenue of buying and selling of the dairy products. They have calculated very grossly the costs involved in the production of each product. ADPCL has maintained the record of revenue earned from each dairy products they sell. However, the reduction of overhead cost per unit of product after increasing the capacity is not calculated. Keeping the constant overhead cost will increase the profit margin for dairy. This could be an opportunity to develop new marketing strategies.

## 6.2 Recommendations

Based on the findings of internal analysis, competitor analysis, interviews with potential customers and extensive discussion with board and staff, following recommendation can be given to ADPCL in order to improve the marketing and sales of their dairy products.

### 1. Capacity building of staff on production and marketing

- Training on marketing skills should be provided to the marketing staff; marketing manager and sales staff.
- Training required on decision making for the investment on and the production of new dairy products to the management team and the board members.
- Recruitment of accountant should be done soon so that the General Manager can get enough time to plan for the action to be done.

### 2. Improve the role of marketing manager and salesman

- The marketing manager and salesmen should be made more active in the market.
- The marketing manager should visit and promote the dairy products in supermarkets, hospital canteens, tea and coffee shops and grocery shops.
- Marketing manager and salesmen should be given a target for the sales and incentives based on the target sales to encourage them to become active in marketing and sales.
- Recruiting of new marketing staff should be done in the later period to collect the market information, to keep good relations with customers and to look for new clients.

### 3. Differentiation of products (yogurt in cup, vacuum packed paneer)

- Production of yogurt in a cup in different sizes (200 ml, 500ml, and 1000ml) should be started to increase sales and profit.
- The problem in consistency and texture of regular yogurt should be identified and improved.
- Vacuum packaging of paneer with the brand and in different sizes (200gm, 500gm, and 1 kg) should be done to enter supermarket for improve sales.
- The demand for full fat-milk (5% fat), standard milk (3% fat) and low-fat milk (1.5%) fat in the market should be studied and production shall be done based on market demand.

### 4. Marketing and distribution of dairy products in new markets

- There are many potential market for dairy products which ADPCL has not intervene till now. One market could be Sauraha, Tandi for the selling of the dairy products.
- New marketing channel should be added for distribution of dairy products in new geographical area. This should be done by contracting separate distributors for the supply and marketing of dairy products.

**5. Apply for the subsidy to install vacuum packaging machine**

- DLSO provides the subsidy to the cooperatives or dairy processors for their improvement in functions.
- ADPCL should apply for the purchase of vacuum packaging machine for paneer packaging.

**6. Strengthen image of Annapurna as high quality dairy**

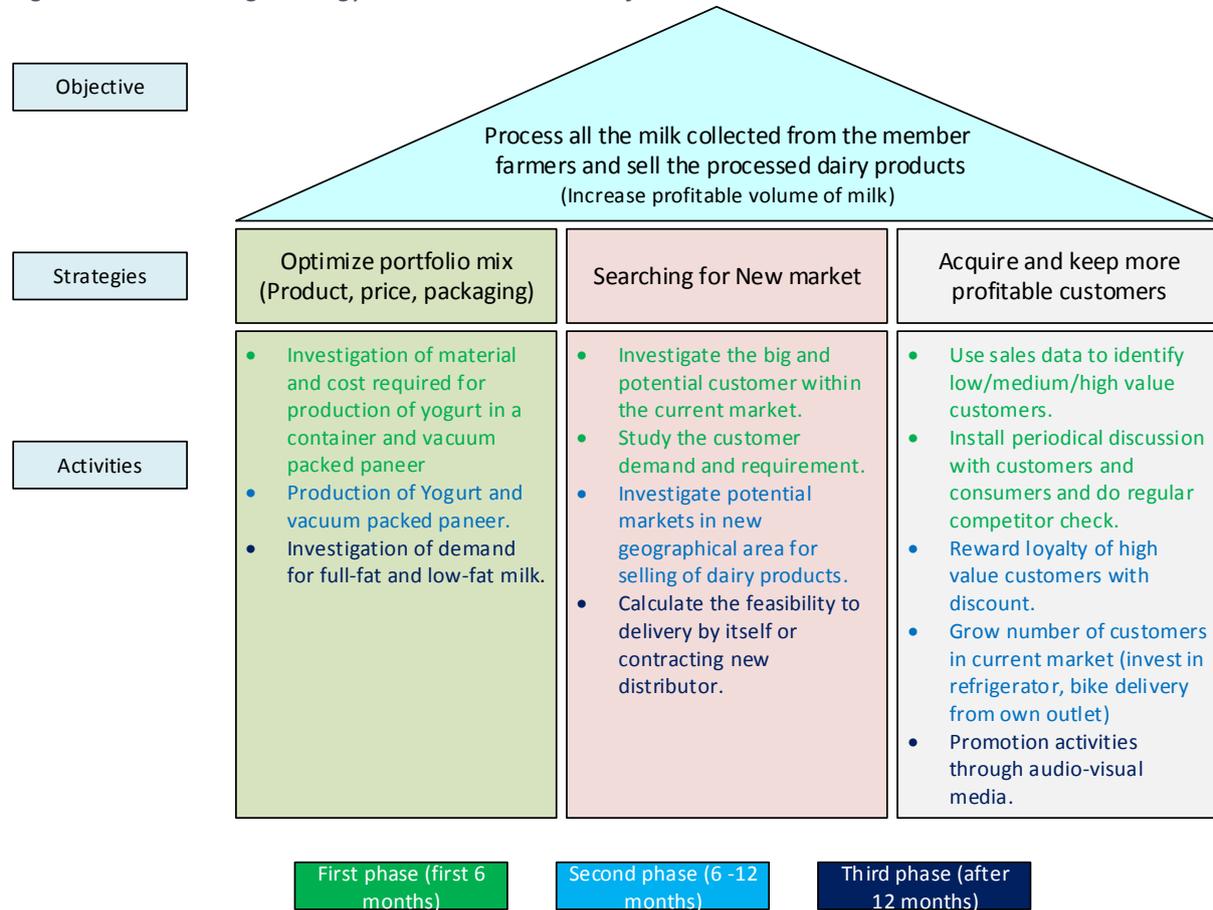
- Strong brand image of Annapurna can be created as high quality dairy by consistent in promotional material and packaging artwork across products including products benefits.
- Different promotional materials like poster, flags, stickers, hoarding board, can be develop and should be distributed it smartly over customers; small seller and big sellers.
- Brand should be used across own assets, processing plant, own outlet, vehicles used in distribution of dairy products, t-shirt for staffs for promotion.
- Key customers and consumers should be invited to show them the quality, hygiene and way of processing to assure them in ADPCL quality products.

**7. Acquire and keep more profitable customers**

- Sales data should be used to value the customer, (low/medium/high)
- Royalty should be rewarded to the high-value customers with a discount, offer or branded gift to encourage them in selling more products.
- Periodical discussion with customers and consumers should be done to get the feedback from them for improvement and regular checking of competitors' offering and products.
- Investment in refrigerator or delivery from outlet should be done to increase the number of customer in the current market. The contract should be done with them to secure the investment.

The strategies recommended for ADPCL are presented in marketing strategy house below to achieve its objectives. Based on particular strategy, different activities are recommended. The activities are breakdown into 3 phases of implementation; activities in green letters denote to start immediately, blue letters denote to plan for the second phase and purple letters denote to think for the long term.

Figure 15: Marketing strategy house recommended for ADPCL



Source: Based on findings

The author prioritizes the activities that ADPCL to follow, the place to visit and the responsibility separated in order to improve sales and marketing is presented in the table below.

Table 21: Recommendation to ADPCL to improve sales and marketing

S.No.	Recommendation	Place	Responsibility
1	Training on Marketing skills development to Marketing manager and sales staff	ADPCL	Agriterra has business advisors who are expert in marketing who can conduct crash course (3-4 days).
2	Marketing Manager and salesmen shall be active in marketing.	Visit to supermarkets, hospital canteens and grocery shops in the current market.	Marketing Manager and Salesmen.
3	Production of yogurt in container and vacuum packed paneer.	Supermarket and grocery shops.	General Manager and Board members.
4	Bike delivery of dairy products from ADPCL retail outlet in the evening and afternoon.	Hospital canteen, some grocery shops and milk booth.	Saleman of outlet and Marketing manager.
5	Use sales data to identify low/medium/high value customers. Reward to the outlet based on their values.	ADPCL	General Manager, Marketing Manager and Board members.
6.	Investigate demand from the customer in the current market. For instance, refrigerator, commission based on target etc.	Department Stores, grocery shops, other distributors	General Manager, Marketing Manager, Salesmen and Board members.
7	<ul style="list-style-type: none"> <li>• Investigate potential markets in new geographical areas.</li> <li>• Study the need and requirement of the customers.</li> <li>• Investigate the local distributor for the new geographical region.</li> </ul>	Sauraha, Tandi, Khairini, Munglin	General Manager, Marketing Manager and Board members
8	• Supply of dairy products to new market.	Sauraha, Tandi, Khairini, Munglin	Salesmen, Marketing manager and General Manager.

The recommended business model for ADPCL is presented in CANVAS business model.

Table 22: Recommended Business Canvas Model for ADPCL

<b>Key Partners</b> <ul style="list-style-type: none"> <li>• Kishan Pragati Cooperative for distribution of feed to the member farmers.</li> <li>• Distributor for a new geographical location.</li> </ul>	<b>Key Activities</b> <ul style="list-style-type: none"> <li>• Collection and chilling of milk from the member farmers.</li> <li>• Processing and distribution of dairy products.</li> <li>• Delivery of the processed dairy products every-day to the retail outlets.</li> </ul>	<b>Value Proposition</b> <ul style="list-style-type: none"> <li>• Good quality dairy products in Reliable price.</li> <li>• Committed to quality standard mentioned by NDDDB (3% fat and 8% SNF in pasteurized milk, 4% fat and 18% total solid in yogurt).</li> <li>• Vacuum packed paneer and yogurt in container.</li> </ul>	<b>Customer relationship</b> <ul style="list-style-type: none"> <li>• Good personal relation between customer and ADPCL.</li> <li>• Regular visit to the retail outlets by the marketing manager.</li> <li>• Reward to the customer based on the volume they sell.</li> </ul>	<b>Customer Segment</b> <ul style="list-style-type: none"> <li>• Milk and yogurt are used by all customer segments.</li> <li>• Ghee and paneer are used mostly by the middle and high-class consumers.</li> </ul>
	<b>Key Resources</b> <ul style="list-style-type: none"> <li>• Has chilling and cold storage facility for milk.</li> <li>• Processing facility for pasteurized milk, yogurt, cream separator, ghee, paneer.</li> <li>• Vacuum packaging for paneer and container for yogurt packaging.</li> </ul>		<b>Channels</b> <ul style="list-style-type: none"> <li>• Direct selling of dairy products to regular 132 retailers and other new retailers.</li> <li>• Retailing through its own outlet.</li> <li>• Private distributor to market other than Bharatpur Metropolitan City.</li> </ul>	
<b>Cost resources</b> <ul style="list-style-type: none"> <li>• Buying of milk from the member farmers.</li> <li>• Processing cost of milk.</li> <li>• Distribution cost of processed dairy products.</li> <li>• Administration cost, salary of the staff.</li> <li>• Cost for marketing and reward</li> </ul>		<b>Revenue Streams</b> <ul style="list-style-type: none"> <li>• Selling of processed dairy products (Pasteurized milk, yogurt in pouch and container, vacuum packed paneer and ghee).</li> </ul>		
<b>People</b> <ul style="list-style-type: none"> <li>• More employment opportunities for the local people.</li> <li>• Decrease health risk due to consumption of pasteurized dairy products.</li> </ul>		<b>Planet</b> <ul style="list-style-type: none"> <li>• Use of clean energy (hydroelectricity) for processing of milk.</li> <li>• Training and support to member farmers on composting and also on biogas production by using livestock manure.</li> </ul>		

## **General Recommendation to Agriterra**

### **1. Capacity building of marketing staff**

- Awareness of the board members on the importance of marketing strategies to improve sales.
- Coordination training to the staff of ADPCL on the concept of marketing strategies (value proposition, segmentation, marketing mix etc. and on market research, customer and consumer's need and demand).

### **2. Follow up after implementation of marketing strategies**

- Assessing the difficulty and ease of implementing the marketing strategies.
- Backstopping in some of the activities that they have not managed to do in implementation.

### **3. Evaluation of progress**

- Analysis of the progress of the strategies after implementation shall be done.
- Presentation of the changes/result should be done to show the changes after implementation.

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## Annexes

### Annex 1: Checklist for interview with different stakeholders

#### Cooperative chief, General Manager and Marketing Manager of ADPCL

- What are the activities does by your organization?
- How do you support your customers and your suppliers?
- Where do you source your milk?
- Who are your regular customer for selling of milk and milk products?
- How/Why do you choose those clients?
- What are the different milk products produced by your cooperative?
- What are the types of processing facilities present in your milk processing plant?
- What are the opportunities and challenges in processing of all collected milk?
- What is the buying price and selling price of milk and milk products?
- What is the cost of production of processed milk and milk products?
- What are the marketing strategies used by your organization to sell the dairy products? (marketing mix 4Ps)
- What are the markets of your processed milk and milk products?
- Are you looking new markets for marketing of your products?
- If yes, then which market do you want to penetrate and why?
- Do you have enough resources to transport the product to other markets?
- What are the challenges faced by your organization in marketing of the processed milk and milk products?
- How the information flows in your organization, market to processors and vice-versa, producers to Processors and vice-versa?
- What support you wish so that you can increase the sales of the dairy products?

#### Retailer

- What are the activities does by your company?
- How do you support your customers and your suppliers?
- Where do you source for the dairy product?
- Why do you choose the ADPCL/other processor's milk products?
- What type of milk products do you sell?
- Who are the regular customers/consumers of the dairy products?
- Why those consumers are attracted towards your shop and the dairy products?
- Which milk product do you sell the most?
- What is quantity of the different milk products you sell per day/week?
- What is the margin of selling different milk products? (Cost price and selling price of the milk products).
- Do you exchange the information to processors on consumers complain and demand? How?
- What are the challenges in buying and selling of the dairy products?
- What are the expectations from dairy processors about the dairy products?

#### Institutional Consumers

- Introduction of the organization (Hospital/security arm force office)
- How do you support your suppliers?
- What type of milk products do you consume?
- What quantity of the dairy products do you purchase in average per week?
- Where do you source the dairy products?

- Why do you choose the product from that processor?
- What are the challenges in buying of the dairy products from the processors?
- Do you exchange the information to processors on product quality? How?
- What are the expectations from dairy processors about the dairy products?

### **Processors**

- What are the activities does by your organization?
- How do you support your customers and your producers?
- What are the types of milk products your company is producing?
- What is the difference in milk products compared with your competitors?
- What is the average quantity of different milk products your company is producing?
- What dairy products your company is focusing on to improve sales and revenue?
- What is the cost for buying of milk and selling of processed milk and milk products?
- Are you planning for production of new dairy products?
- What is the marketing channels for the selling of the processed dairy products?
- How do you collect the market information?
- What are the challenges and opportunities in production and marketing of the processed dairy products?

### **Government and Non-government stakeholders**

#### **DLSO chief and planning officer (Government)**

- What kind of support do you provide to the actors of dairy value chain?
- What kind of support do the small dairy processors get from DLSO?
- Do you work for the monitoring of the dairy products in the market?
- What do you look for the quality of the dairy products available in the market?
- What do you say about the challenges in milk production and marketing?

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- What kind of support do you provide to the small dairy cooperatives?
- What do you say about the challenges of milk marketing of small dairy processors?
- What can be do to improve the market access of the dairy products of small dairy processors?

#### **FGD, Points to be considered for discussion**

The discussion will be done by presenting the statements and questions to all the participants of FGD.

Market of processed dairy products in Chitwan and neighbouring districts.

- Do you think there is enough market for processed dairy products in Chitwan
- What are the other potential market for the processed dairy products

Why ADPCL is not in reach with retailers

- In what ways the customer/retailers are interested in selling dairy products?
- How to reach the customer?
- What key information the dairy processors should know for improving market access?
- What the ADPCL is lacking in reach with the customers?
- What could be the best promotion technique in reaching customers?

What shall be done to improve the market access of the dairy products?

- Which market segments should be targeted to sell the quality dairy products?
- Do you think diversification of the products will improve the market access of the dairy products?
- Which dairy products should the ADPCL focus in order to improve market access?
- Do you think branding of the products do have market in Chitwan and neighbouring district?

## Annex 2: Calculation of value share

Table 23: Calculation of value share by the different actors for pasteurized milk

Actors	Price per liter of milk (Rs)	added value	value share
Producer	48		75
ADPCL	58	10	16
Retailer	64	6	9

Source: interview with General Manager and Marketing Manager

### Annex 3: Calculation of profit margin per unit dairy products

Table 24: Calculation of profit margin per unit dairy products

Particulars	TOTAL PRODUCTS	Raw milk for retail	Pasteurized milk	Yogurt	Ghee	Paneer
	2017	2017	2017	2017	2017	2017
	June	June	June	June	June	June
Volumes	77,422.50	14,818.00	38,750.00	22,010.00	325.50	217.00
Rate (Rs)		56.00	58.50	74.00	850.00	530.00
Sales (volume * price)	5,117,108.00	829,808.00	2,266,875.00	1,628,740.00	276,675.00	115,010.00
Total discounts	77,610.00		53,940.00	11,470.00	4,250.00	7,950.00
Returns	20,460.00		8,990.00	11,470.00		
<b>Net sales</b>	<b>5,019,038.00</b>	<b>829,808.00</b>	<b>2,203,945.00</b>	<b>1,605,800.00</b>	<b>272,425.00</b>	<b>107,060.00</b>
Transportation related to sales (vehicles)	114,180.75	22,227.00	58,125.00	33,015.00	488.25	325.50
Logistic costs other	15,224.10	2,963.60	7,750.00	4,402.00	65.10	43.40
<b>Distribution &amp; selling costs</b>	<b>129,404.85</b>	<b>25,190.60</b>	<b>65,875.00</b>	<b>37,417.00</b>	<b>553.35</b>	<b>368.90</b>
Average rate (Rs)	48	48	48	48	48	48
Standard cost of goods sold (milk)	3,731,904.00	711,264.00	1,860,000.00	1,056,480.00	15,624.00	88,536.00
Standard cost of goods sold (other ingredients)	302,208.00	0.00	0.00	297,153.00	4,005.00	1,050.00
Material costs: price (packaging and other costs)	169,024.00	14,818.00	92,256.00	52,216.00	9,300.00	434.00
Material costs: Efficiency variances (loss of product and material due to production)	42,873.00	0.00	22,668.75	16,287.40	2,766.75	1,150.10
Material costs: Loss in products other	64,309.50	0.00	34,003.13	24,431.10	4,150.13	1,725.15
Labour costs production	106,568.70	20,745.20	54,250.00	30,814.00	455.70	303.80
<b>Cost of goods sold</b>	<b>4,416,887.20</b>	<b>746,827.20</b>	<b>2,063,177.88</b>	<b>1,477,381.50</b>	<b>36,301.58</b>	<b>93,199.05</b>
<b>Gross profit</b>	<b>472,745.95</b>	<b>57,790.20</b>	<b>74,892.13</b>	<b>91,001.50</b>	<b>235,570.08</b>	<b>13,492.05</b>
Marketing Spend	0.00	0.00	0.00	0.00	0.00	0.00
<b>Contribution</b>	<b>472,745.95</b>	<b>57,790.20</b>	<b>74,892.13</b>	<b>91,001.50</b>	<b>235,570.08</b>	<b>13,492.05</b>
Marketing overhead (costs marketing manager and sales team)	7,612.05	1,481.80	3,875.00	2,201.00	32.55	21.70
Administrative overhead (accounting)	15,224.10	2,963.60	7,750.00	4,402.00	65.10	43.40
General management total	16,935.30	2,222.70	9,300.00	5,282.40	78.12	52.08
Other overhead	8,467.65	1,111.35	4,650.00	2,641.20	39.06	26.04
<b>Selling, General &amp; Administrative costs</b>	<b>48,239.10</b>	<b>7,779.45</b>	<b>25,575.00</b>	<b>14,526.60</b>	<b>214.83</b>	<b>143.22</b>
<b>EBIT</b>	<b>424,506.85</b>	<b>50,010.75</b>	<b>49,317.13</b>	<b>76,474.90</b>	<b>235,355.25</b>	<b>13,348.83</b>
Tax on EBIT 20%	84,901.37	10,002.15	9,863.43	15,294.98	47,071.05	2,669.77
<b>Net profit</b>	<b>339,605.48</b>	<b>40,008.60</b>	<b>39,453.70</b>	<b>61,179.92</b>	<b>188,284.20</b>	<b>10,679.06</b>

per unit margin	4.39	2.70	1.02	2.78	578.45	49.21
income of ghee 50% from milk and 50% from yogurt so income of ghee is divided			94,142.10	94,142.10		
	339,605.48	40,008.60	133,595.80	155,322.02	0.00	10,679.06
after adjust of income divided by ghee then per unit margin	4.39	2.70	3.45	7.06	0.00	49.21

Source: interview with General Manager

Table 25: Calculation of profit margin per liter of milk sold to other dairy processors

Average price paid for farmers per liter of milk (Rs)	Average selling price per liter of milk to other processors (Rs)	Overhead cost/ liter of milk (Rs)	Profit margin per liter of milk (Rs)
(a)	(b)	(c)	$d=b-(a+c)$
48	49.5	0.5	1

Source: interview with General Manager