Development of Integrated Dairy Scheme in Nangarhar
UTF/AFG/060/AFG

Dairy Market Study Report of Jalalabad, Nangarhar Province Afghanistan

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Acronyms

AFG	Afghanistan
AI	Artificial Insemination
AGAP	Animal Production Service of FAO
AI	Artificial Insemination
CPI	Consumer Price Index
FAO	Food and Agriculture Organization of UN
GER	Germany
IDS	Integrated Dairy Scheme
Kg.	Kilogram
Km.	Kilometer
Lit.	Liter
LOA	Letter of Agreement
MAIL	Ministry of Agriculture, Irrigation and Livestock
MCC	Milk Collection Centre
MPCS	Milk Producers' Cooperative Society
MT	Metric Ton
NFM	National Field Manager
NLPO	National Livestock Production Officer
Pvt.	Private
SDA	Senior Dairy Advisor
SWOT	Strengthen, Weakness, Opportunity and Threat
TOR	Terms of Reference
UHT	Ultra-heat Treated

Executive Summary

This study is undertaken to assess the market situations of fresh milk and dairy products in Jalalabad city to indicate the feasibility of establishing the multi-product dairy plant. Structured questionnaires were prepared and administered. A total of 122 respondents including the farmer, importer/ trader, processor, household and institutional consumer were interviewed. A number of concerned officials, institutions and government offices were also contacted to collect relevant data. This market analysis clearly indicates that the establishment of multi-product dairy plant is feasible from the marketing perspective because:

a) The present and potential demand for dairy products is larger than the estimated 5 Mt./day fresh milk processing capacity of the proposed plant;
b) The share of imported products amounts to a very small portion of that demand while the price of imported products is significantly higher than that of local the products. Therefore, there will not be any serious competition from the imported products;
c) Consumers do not necessarily prefer to buy imported dairy products over the local products except when there is no choice, like in the case of powder milk.
d) The present and potential supply of fresh milk and the potential volume of supply to the proposed plant of 5 Mt./day capacity are significantly larger than the proposed processing capacity. Thus, the proposed plant should be established with ample provisions for future capacity expansion.
e) There is no processing plant in Nangarhar that will stand as competitive to the proposed dairy plant.
f) There are many favorable situations and advantages for exporting dairy products to bordering Pakistani markets; and transporting bulk milk to Kabul city as the security situation improves;
g) The interest and potentiality of participation of the smallholder farmers/coops in the marketing of dairy products and supplying fresh milk to the proposed plant is very high.

Based on the observations and findings, and the proposed expansion of milk collection activities to Kunar and Laghman provinces, following are recommended;

- A minimum of 5 MT/day multi-product dairy processing plant would be suitable to meet only the market demand of Jalalabad city and its neighbourhood;
- A more than 10 MT/day processing facility would be required if milk is to be collected from the neighbouring provinces of Kunar and Laghman;

- Also, the proposed Jalalabad dairy plant could also serve as a feeder and balancing dairy for larger Kabul market; thus the plant storage/cooling capacity could even be up to 20 MT/day;
- The multi-product plant should also include the required facility for the production of plain and sweetened condensed milk in the appropriate type of packaging;
- If the volume of desired quality milk production and collection increases, even long-life milk products should be considered in the follow-up phase of the project once a critical minimum of circa 50,000l/day has been reached.

Apart from the conclusion on the feasibility of the proposed plant, this report has also indicated certain measures as recommendations that could facilitate the marketing of the final products. But those measures are not the pre-conditions for the feasibility. Those may be interpreted as risk of low level which could be mitigated by adopting the recommendations mentioned in this report.

Dairy Market Study of Jalalabad, Nangarhar Province, Afghanistan

1. BACKGROUND

Livestock keeping is an important part of the national farming system in Afghanistan. It is a vital component of the Afghanistan economy, both for food security as well as for income and employment generation. Studies and assessments by the FAO Programme have shown that for a large proportion of the rural population, cattle are the most important animal species and increased milk production for sale and home consumption is seen by many families as an important opportunity for reducing their poverty.

On the basis of the successful on-going experience with Integrated Dairy Schemes in Kabul, Mazar, Herat and Kunduz Provinces, the Governor of Nangarhar Province requested FAO to develop a specific programme to assist local farmers, particularly women, to improve and upgrade dairy farming practices and conditions in order to help them produce safe and hygienic milk thereby contribute towards reducing their poverty. Accordingly, Development of Integrated Dairy Schemes in Nangarhar *(UTF/AFG/060/AFG)* Project was developed and implemented from May 2010 in the Province. The Project is expected to end in April 2013 with a total project cost of US$3.95 million.

The established development goal of the Project is "to improve food security in Nangarhar (Province) by raising the productive capacity of the local livestock sector through improvements in livestock husbandry and feeding, underpinned by sound public and private livestock health practices and functioning domestic markets for livestock products".

The Project addresses the Afghanistan National Development Framework objectives of enabling farmers to respond to the domestic market through better knowledge, tools and market linkages, and also the Agriculture Master Plan. The Project focuses on the development of integrated dairy schemes in Nangarhar Province. Through training and supply of basic inputs it is assisting dairy farmers in the target areas to improve both efficiency and scale of dairy production. It also includes the key area of development of marketing facilities and organizational structures for the sustainable future management of the dairy schemes.

2. INTRODUCTION

The basic objective of Development of Integrated Dairy Schemes in Nangarhar Project *(UTF/AFG/060/AFG)* is *"to strengthen the livestock production systems of poor rural households, while developing their marketing opportunities, and improve local livestock production, productivity and smallholders' incomes in Nangarhar"*.

The project purpose is to improve production and efficiency of milk production and processing and to establish a member-owned network of dairy producers through the formation of cooperative societies and the dairy unions.

To achieve the purpose, the Project is formulated with following four components:

Component 1: Feed resources development

Component 2: Animal health services
Component 3: Integrated dairy development
Component 4: Institutional support to milk cooperatives

The immediate beneficiaries of the Project are around 1,500 farm families from Kama, Behsod, Ghanikhil, Batikot, Khogyani and Surkhood district and Jalalabad city of Nangarhar Province. The majority of those targeted families is small livestock owners and interested to supplement their limited income opportunities with a regular income from the sale of milk. They also include landless and sharecropper families. Regular cash incomes are especially important for these resource poor families. The selection of villages for establishing new collection centers also gives priority for those locations with a larger number of food insecure households. The Project has specifically targeted the village women by providing technical assistance and advice in the areas of milking, hygiene and care of young stocks.

To achieve its purpose the Project is providing following supports under Component 'A' mentioned above:

- Demonstrations of improved varieties of fodder crops;
- Organize the production and marketing of improved fodder seeds;
- Feed mill construction & equipment installation;
- Establish animal feed plant with at least 4 MT/ day concentrates and mineral feed produced capacity and their selling;
- Arrange the commercial production and marketing of concentrate and mineral feeds through the dairy schemes.

Similarly, under component 'B' mentioned above the Project has planned to:

- Monitoring and control the dairy cattle of the member farmers for Zoonosis diseases;
- Provide regular vaccination for the cattle of member farmers of the dairy schemes;
- Men and women farmers trained on animal health and Artificial Insemination (AI) subjects;
- Support the local AI technicians (Government and private) to implement AI activities for the member farmers of the dairy scheme in six districts.

Beside, to meet its purpose the Project under component 'C' mentioned above is supporting to/for the:

- Collection of a minimum of five tones of milk daily through village Milk Collection Centre (MCCs) involving at least 1500 farm families;
- Establish/develop 15 village milk collection centre and provide the necessary tools and equipment for measuring of quantity and quality;
- Establish milk transportation and cooling facilities;
- Establishment of shops for selling the milk and dairy products or through commission agents;
- Establish dairy processing plant with at least 5000 Lit. per day capacity;
- Income generation for the development of the milk schemes.

Under component 'D' mentioned above, the Project is supporting for the:

- Creation of formal membership of dairy farmers to village milk collection centres/cooperative societies;
- Development of independent staff and management structures for the dairy schemes including their dairy and feed processing centres;
- Creation and development of structures for financial management and performance monitoring of the dairy scheme.

This dairy market study of Jalalabad city is part of the Project activities directed towards immediate objective B and the action plan b mentioned above. In other words, it is a ground work or pre-feasibility assessment for establishing the planned dairy plant in Jalalabad for producing fresh milk, yoghurt and butter milk with a minimum daily processing capacity of 5 MT.

2.1 Objectives of the Study

The basic objective of the study is to assess the market situations of fresh milk and dairy products in Jalalabad city to indicate the feasibility of establishing the planned dairy plant from the marketing perspective alone.

2.1.1 Specific objectives of the study

The specific objectives of this study are:

7. Identify and quantify dairy plants (local and mini) currently supplying milk and products to Jalalabad city with their monthly/yearly sales volume of milk and products;
7. Determine the approximate amount and costing of raw milk being supplied directly by the producer farmers to the consumers in the Jalalabad city;
7. Assess the size of the Jalalabad dairy market in terms of total consumption of milk and milk products; and the share of imported milk and milk products in the total demand;
7. Estimate the costs of milk production, processing and marketing and recommend whether locally produced milk and dairy products can compete with imported products;
7. Estimate the fresh milk and products being exported to the neighboring border markets;
7. Identify opportunities and constraints for improved smallholder participation in these markets;
7. Identify and specify the consumer preferences for milk and dairy products (fresh local products vs. imported ones); and
7. Identify consumer willingness (and ability) to pay for existing and potential other milk and dairy products.

2.2 Methods of Study

Following steps and activities were undertaken to complete this study:

a. The existing dairy market study report and information on Nangarhar province and of the national level, along with FAO dairy market study reports were reviewed. (Refer Bibliography).
b. A detail dairy market study plan was prepared and data collection was organized but in a reduced scale.
c. Five layers of dairy value chain stakeholders were interviewed in structured questionnaires. The respondents were purposively interviewed.(Annex – 2-A)
d. A wide range of resource persons, institutions and officials were contacted to gather data and information and to discuss some issues. (Annex – 2 – B)

2.3 Limitations

Following limitations are encountered while executing this market study:

a. Reference data and information on the dairy market and marketing situation of Jalalabad market are not available as was required. This study itself is a first such analysis of Jalalabad market.
b. Detail survey of the dairy value chain stakeholders could not be implemented due to time and financial constrained.
c. 'Memory bias' of the respondents (whoever could be approached) is very high as detail and friendly interview could not happen due to time and security situations.
d. Security situations of Jalalabad constrained the movements of the staff, especially of the international consultant. The latter could not visit any of the stakeholders to collect information and discuss the situation.

Such constraints contributed towards delays in the analysis and preparation of the report as well. However, the quality of the analysis and the structure of the study report have been maintained in line with the objectives of the study but within the available data and information.

3. DEMAND FOR FRESH MILK AND DAIRY PRODUCTS

Two different approach and process have been adopted to estimate the existing and potential demand for fresh milk and milk products in Jalalabad market for the purpose of this study. These are based on the population of Jalalabad city and the present consumption pattern of dairy products as gathered from the consumers' survey in Jalalabad. And two levels of demand estimations have been arrived at – lower and upper – to assess the size of the Jalalabad dairy market in terms of total consumption of milk and milk products.

3.1 Size of the Market

According to the Afghanistan population statistics, the settled population of Nangarhar province in 2009/10 is 1,358,400. About 14.19 %[1] or 192,700 people lives in the

[1] *Afghanistan Statistical Year Book 2009-10, Central Statistics Organization, Islamic Republic of Afghanistan, Issue No. 31, September 2010.*

urban area alone – mostly in Jalalabad city. With fertility rate of 6.3/women, the average family size is estimated at 8 members /family by UNICEF. Thus, the total urban HH is estimated at 24,088 which could be considered as the targeted minimum size of the market for dairy products produced by the proposed dairy plant in Jalalabad city. Because, another part of the population (nomads) is excluded in this estimate. The interviews with the consumers has revealed that each household, on the average, purchases 1.82 Lit./day of fresh milk. Accordingly, the potential size of the market is 43,840 Lit./day of fresh milk plus other dairy products. This is the upper side demand estimation but the nomadic part of the population is excluded in this estimation.

3.1.1 Demand for dairy products – General consumer

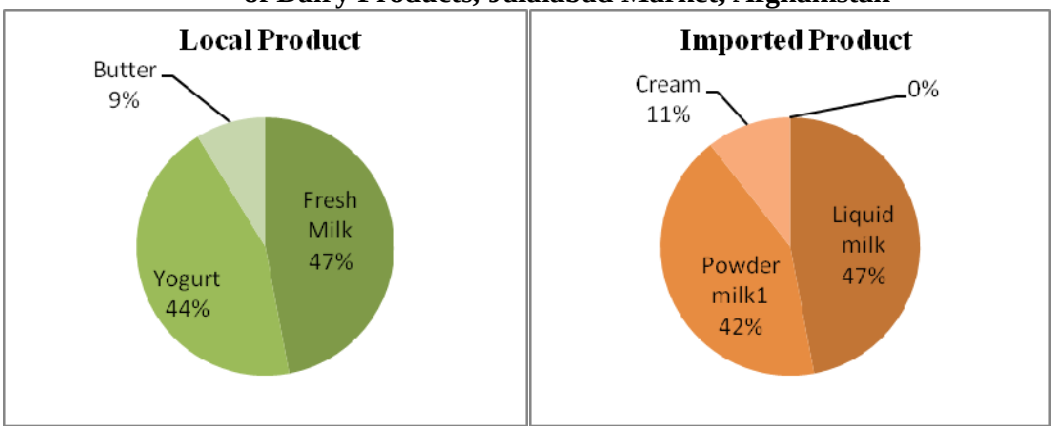
The consumer survey indicates that 60.87 % of the consumers in Jalalabad market buy local fresh milk and milk products and the remaining 39.13% of the consumers depend on imported dairy products. Thus, the number of HH consuming local fresh milk alone on daily basis is 14,662 (60.87% of the urban population). The survey also indicates that each household buys 1.82 Lit./day of fresh milk (Annex – 3.1.A). The lower side of demand for fresh milk, therefore is **26,684 Lit./day**. Similarly, the demand for dairy products is estimated which is presented in (Table – 3.1.1).

Table 3.1.1
Present and Potential Consumption of Fresh Milk and Dairy Products in Jalalabad Market, Afghanistan

Product	Consumption/HH/Day	HH number	Total Potential consumption/Day	Remarks
Fresh milk Lit.	1.82	14,662	26,684	
Yogurt Lit.	1.71	24,088	41,190	
Cream Lit.	0.25	12,044	3,011	Assume 50 %
Butter Kg	0.034	24,088	819	

Fresh milk is the major component in the total 'dairy consumption basket' of the consumers in Jalalabad city both in the case of local and imported dairy products. The composition of consumer basket is depicted in **Figure – 3.1.A**. The second important local dairy product consumed is the yogurt followed by butter, while it's the cream in imported product group. There is high demand for cream in the market and the consumers have to buy the imported cream because there is no local production. Such gap in the dairy market could be filled by the proposed dairy plant.

Figure – 3.1.A
Composition of General Consumers' 'Consumption Basket' of Dairy Products, Jalalabad Market, Afghanistan



3.1.2 Potential demand for dairy products – General consumer

The above estimates are based on the present consumption (demand) pattern which is constrained by different factors: a) the non-availability of dairy products in the market, b) high price of imported products, c) very limited outlets for fresh and local products, d) unhygienic local products, and e) consumers' dis-satisfaction – **50% of the surveyed consumers said that they are not satisfied with the presently available local dairy products.** Such 'constrained demand' for dairy products is also evident from the fact that the consumers' survey could not pick up the small and insignificant volume of present consumption of other dairy products like quark, cheese, ghee, etc. Such products, presently, are not easily available in the market. Improvements in these constraining situations and availability of different dairy products with the establishment of proposed dairy plant will result in substantial increments in the number of consumer, number of dairy products consumed as well as in the volume of their purchases. Evidently, the existing and potential demand for fresh milk and dairy products is substantially greater than the estimated daily production capacity of the proposed dairy plant. Above all, there are three very good prospects for the increase in the demand for and for supplying the dairy products in the future in Jalalabad market.

Firstly, the demand for fresh milk and dairy products is continuously increasing over the years. Such increase in demand is attributed to the increase in the population and increasing number of rural population also buying dairy products from the market. The majority of the interviewed traders of Jalalabad market reported that the demand for liquid/fresh milk has remained very high and has increased by more than 21% compared to the previous years. They also reported that the demand for most of the dairy products in Jalalabad market has increased by more than 10% annually. The cheese and cream are also having high demand and the demand for cheese alone has increased by more than 14%. The largest increase in demand has been for yogurt (35 %) and the demand for cream and ghee has increased by about 13% (Table 3.1.2)**.** *Secondly*, there are shortages in the supply of different dairy products in Jalalabad market. About 38 % of the traders feel that there is shortage in the supply of yogurt. Similarly, there is also shortage in supply of butter and cream in the market(Table 3.1.2).

Table – 3.1.2
Change in the Demand for Dairy Products and Magnitude of Increase
Jalalabad Market, Afghanistan

Milk product	Highly demanded at present	Highly demanded last year	% increase in demand	Shortage in supply felt by trader
Fresh milk	88% Trader	88% Trader	21.46 %	4 % Trader
Dry milk			NI	
Yoghurt			35.00 %	38 % Trader
Cheese	6 % Trader	6 % Trader	14.50 %	
Quark			NI	
Butter			NI	50 % Trader
Cream	6 % Trader	6 % Trader	13.38 %	4 % Trader
Ghee			12.50 %	

Thirdly, the consumption of fresh milk and dairy products in Afghanistan (both in terms of quantity and varieties) may appear less popular with only per capita consumption of 0.16 Lit../day[2] than in other many countries. However, dairy products are very important food item for an Afghan. Their significance as important food item is reflected in the weight assigned to this product category while deriving the Consumer Price Index of the country. All food item in total is assigned 61.3% weight in calculating CPI while Milk and milk products (eggs are also included in this category) alone is weighted at 5.6 % which is third after Bread & cereals (28 %) and meat (6 %). The milk and milk products thus constitute a very important item in total food consumption in Afghanistan. This factor further reinforces the existence of large potential demand for dairy products in Jalalabad market even in the long run.

3.1.3 Demand for dairy products – Institutional consumer

Institutional consumers are the institutions like police, military, hospitals, school hostels etc who buy products in bulk on a regular basis.

Different from general consumer is the category of 'institutional consumer' who also contributes in determining the market size of the dairy products. Most of the interviewed institutional consumers (80 % of them) are regularly using imported dairy products and in sizable amount, specially the powder milk which could be considered as 'substitute' for homogenized fresh milk. On the other hand, half of them are also regularly using local dairy products. And some of them (30% of interviewed) are buying dairy products directly from the farmers There are also some institutional consumers who are using only local dairy products.

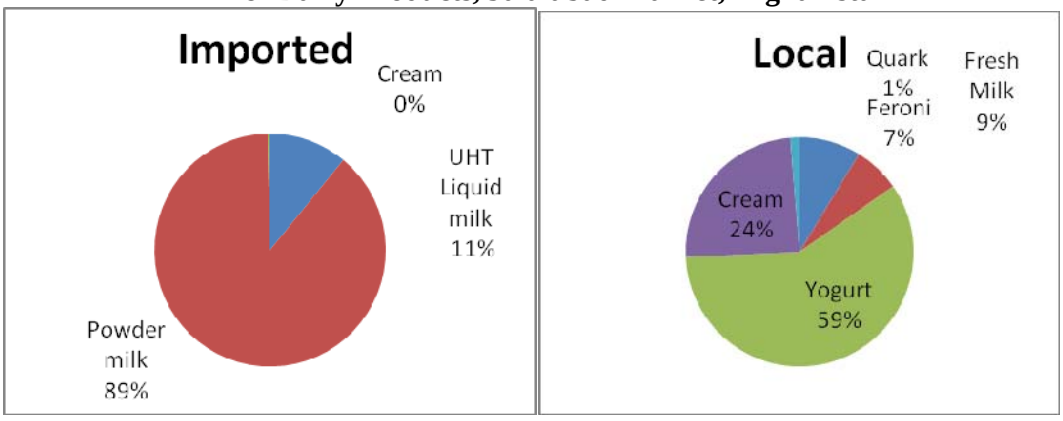
[2] *Calculated from Afghanistan Statistical Year Book 2009-10, Central Statistics Organization, Islamic Republic of Afghanistan, Issue No. 31, September 2010.*

Table – 3.1.3
Quantity of Dairy Products Purchased by Institutional Consumers
Jalalabad Market, Afghanistan

Imported Dairy Product			Local Dairy Product		
Imported	**Quantity**	**% of total Q**	**Local**	**Quantity**	**% of total Q**
Liquid UHT milk Lit./day	161	10.88	Fresh milk Lit./day	13.18	8.69
Milk powder Kg/day	1,314	88.78	Firni Kg./day	10	6.59
Cream Lit./day	5.06	0.34	Cream	37	24.39
			Yogurt Lit./day	89.5	59.01
			Quark Lit./day	2	1.32
Total	*1480.06*	*100.00*		*380*	*100.00*

The quantity of imported and local dairy products purchased by the institutional consumers is presented in Table – 3.1.3. Powder and UHT liquid milk are the two main imported products purchased in substantially large quantity by them. In the case of local product, the main items are yogurt, fresh milk and Firni (product very similar to pudding or custard). The composition of 'consumption basket' of institutional consumers is depicted in Figure 3.1.B**.**

Figure – 3.1.B
Composition of Institutional Consumers' 'Consumption Basket'
of Dairy Products, Jalalabad Market, Afghanistan



The preference of institutional consumers for imported dairy products is due to their perception of high quality and good taste of those products. But there are some institutional consumers (22 % of interviewed) who buy imported products simply because they are easily available. And most of them reported that they have easy access to imported dairy products in Jalalabad market. As in the case of general consumers, easy access to the products is an important consideration for the institutional consumers as well. On the other hand, some institutional consumers less prefer the local dairy products because they perceive those as unhygienic and without standard. Even then, many think that products from proposed plant of 5 MT/day capacity can compete with imported ones because those will be of good and fresh

taste, standard product and well processed. However some thought that the local products may not compete with imported ones. But the reasons they think are not the taste and quality of the products but due to the lack of packaging and grade/standard and water mixed in local products.

All the institutional consumers expressed their willingness and readiness to buy the products from the proposed dairy plant because: a) they expect that the products will have good/fresh taste; b) good quality and packing; and c) is 'own (Afghan) product'. And the conditions they forwarded for buying from the proposed plant of 5 Mt./day capacity are: a) good quality; b) high standard and packing; and c) possibly low price. All of them also thought that establishment and operation of a dairy plant is necessary because: a) they are not satisfied with present quality of local products available in the market (more than 63 % of the interviewed); b) it will be better for the economy; c) abundant fresh milk is available for processing; and d) is the need of the market. Also as many as 60% of them expressed their general dis-satisfaction to the available dairy products in the market.

3.1.4 Share of Imports in Total Demand

A wide range of dairy products are imported into Jalalabad market by the importer/ wholesaler. There are four major importers and a number of wholesaler and retailer in Jalalabad market (more than 150 small and big scattered all over the market) regularly selling imported dairy products. Some of them are doing dairy business for last 20 years and most for last 10 years. About 22 % of them are even having branches or shops in other places like Kabul. Three importers are the exclusive dealer of international dairy houses – Nestle, Engrofood and Noorpur. Three of those importers and eleven of the large wholesaler/retailers were interviewed for the study(Annex – 2.A).

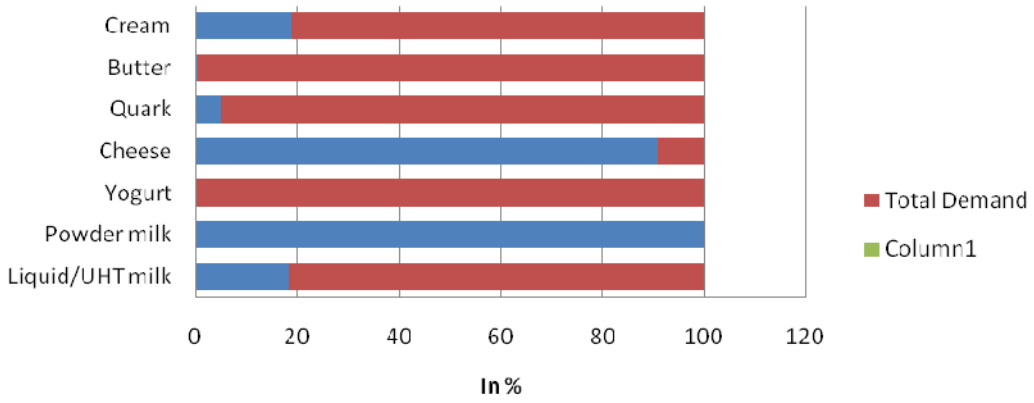
Table – 3.1.4
Quantity of Milk Products Imported into and Share in Different Seasons in Jalalabad Market, Afghanistan

Dairy product	Lit./Kg/month	% of total potential demand	% in Spring	% in Summer	% in Autumn	% in Winter
Liquid UHT milk	146,115	18.26	28.92	13.9	26.73	30.46
Dry powder milk	2,805		26.29	23.14	26.29	24.28
Yoghurt	218	0.02		57.88		42.12
Cheese	2,735		23.54	26.46	26.46	23.54
Quark	150		25	25	25	25
Butter	120	0.49	25	25	25	25
Cream	17,058	18.88	21.3	24.28	4.54	49.88

Information on total quantity imported and sold in Jalalabad market are very sporadic. The interviewed three importers indicated that they alone are importing 111,375 Lit. of UHT, liquid milk of different brand every month and very small quantity of cream. But the total import of liquid UHT milk by all the traders combined is estimated at 146,115 Lit./month. The quantity imported of all dairy products is presented in Table – 3.1.4. Evidently, all those imported quantities are not sold in Jalalabad market, some are sent to other markets like

Kabul where the importer/wholesaler have market linkages. Therefore, one of the traders estimated that only about 10,125 Lit. Liquid UHT milk (5,400 Lit. of Milk Pak and 4,725 Lit. of Everyday) and 4,500 lit of cream during summer and 6,000 Lit. in winter months is being sold in a month in Jalalabad market. This quantity amounted to 338 Lit./day of liquid UHT milk, which constitutes only a small fraction of the existing total demand for fresh milk (26,684 Lit./day). Even if all that is imported into Jalalabad market (146,115 Lit./month or 4,871 Lit./day) is sold in Jalalabad, still the imports constitute a small proportion of total demand. It's less than 19% in the case of cream and liquid UHT milk (Table – 3.1.4). Similarly, the share on total demand for butter, quark and yogurt is even very insignificant. On the other hand, the share of import of cheese in total demand is substantial because there is no domestic production in Nangarhar province (exception is a very small amount of goat cheese produced by a women group which is sold to Kabul market). Similar is the case of powder milk. The share of imports in total demand for different dairy products is presented in Figure 3.1.C.

Figure - 3.1.C
Share of Import in Total Demand for Dairy Products
Jalalabad Market, Afghanistan

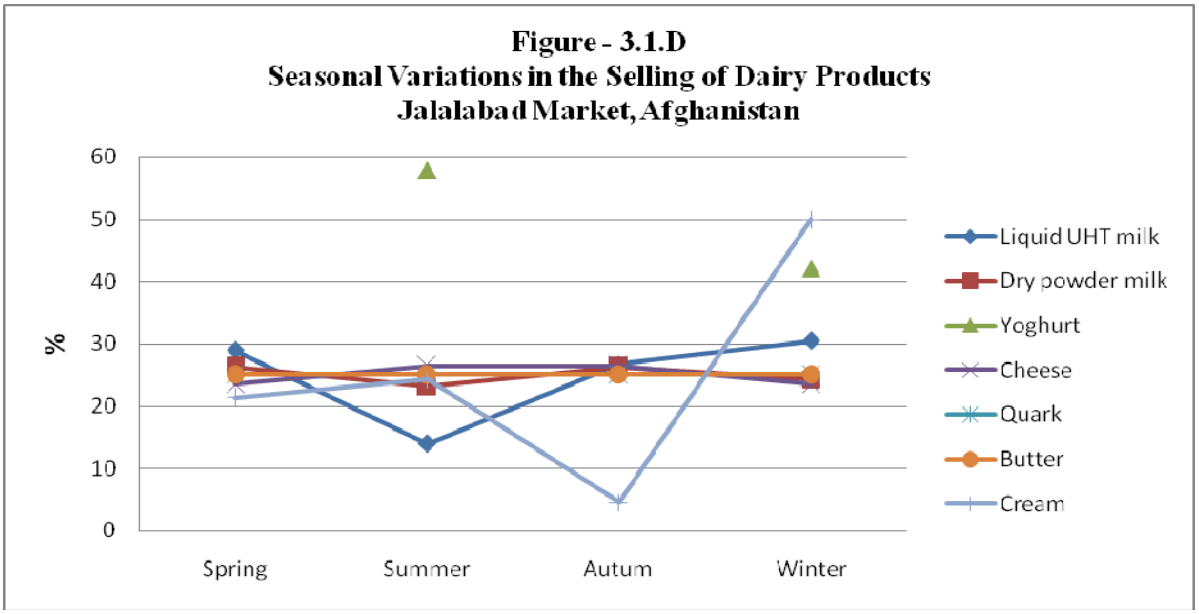


Apart from such indication on the share of imports in total demand, the collected information also indicates that:

a) Quantity supplied of dry powder milk and cheese is large indicating their large size of demand without domestic production. At the same time, they imply that these products will be very competitive for new entrant in the market.
b) Quantity supplied of cream and liquid/UHT milk is 'non-ignorable' indicating large size of demand with the presence of domestic production (fresh milk). It as well implies the presence of certain degree of competition in the market for these products.
c) Quantity supplied of yogurt, quark and butter is virtually 'insignificant' in terms of total demand which could be taken as existence of large 'unmet demand' in the market and, thus, will be less competitive for the new entrant in the market.

The traders also indicated the seasonality in the supply of different dairy products in the market which is depicted in **Figure – 3.1.D**. A very clear seasonal variations in the demand for yogurt, cream and liquid UHT milk could be noticed. These products have high

demand during winter season. Such seasonal variation is negligible in the case of cheese, quark, butter and dry milk powder. Thus, the production planning of the proposed dairy plant should address such seasonality in the demand for dairy products – larger quantity of yogurt should be produced and sold during summer but cream and fresh milk during the winter season (Table – 3.1.4).



3.2 Consumers' Preference

Majority of the consumers buy local dairy products from the 'milk shop' or 'village shop' or 'super market' in the city, and very few buys directly from the farmer producer. Whatever is their buying sources, half of the total consumers are 'not satisfied' with the present local dairy products mainly due to their poor quality and un-hygienic handling. ***The proposed dairy plant producing homogenized fresh milk and hygienically producing and handling dairy products will meet the present un-fulfilled consumers' preference.***

3.2.1 Consumers' preference for imported vs. local product

Although 'not satisfied' with present local dairy products, the consumers preferred local dairy products as against imported ones because of their quality of being 'fresh' (most preferred), 'good taste' (second preference) and 'cheap' (third preference). About 39% of the consumers are attracted by the 'freshness' of the present local products which will also be maintained by proposed plant and will be a strength against the imported products. On the other hand, almost a equal proportion of consumers considered that both the imported (31.25%) and local products (32.61%) have 'good taste'; Table 3.2.1. Therefore, the products coming out of proposed processing plant will be considered equally of 'good taste' by the consumers which will be another strengthen to compete with imported products. The price of the product does not seem to be a constraint for the consumers in buying the local products but their expectation of being cheaper than the imported ones is articulated. However, nice packing' and 'longer keeping quality' of the imported dairy products attracted some consumers against the local products. Such consumers could be attracted towards the dairy products produced by proposed plant as both of those consumers' preferences (nice packing

and longer keeping quality) could be easily achieved. Thus, this study verifies that in the case of Jalalabad market consumers do not necessarily prefer to buy imported dairy products over the local products. Such consumers' behavior is also affirmed by the traders' perceptions on consumers' preference. (Section 3.2.2). However, in the case of 'powder milk' consumers have no choice and have to buy imported one because there is no locally produced powder milk nor will it be produced by proposed milk. On the other hand, certain products like yogurt, chakka, Firni and quark are imported in very small quantity, and thus are not available in the market.

Table – 3.2.1

Reason for Buying Local/Imported Dairy Product by the Consumers Jalalabad Market, Afghanistan

Reason	Buy Local Product (% of Consumer)	Buy Imported Product (% of Consumer)	Remark
Cheap	23.91	28.13	
Fresh	39.13	15.63	
Good taste	32.61	31.25	
Nice Packing	4.35	18.75	
Keep longer	NR	6.25	

NR = Not Reported

3.2.2 Traders' perception on consumers' preference

Some traders reported that the consumers prefer local product over the imported ones also because the local products are 'own' (Afghani) products. Such consumers' emotion or attachment is a strong competitive edge and should be utilized by the proposed dairy plant for the market entry of its products.

On the other hand, only a very few traders (7 % of the interviewed) handling imported dairy products are selling local products as well but in a very insignificant quantity. They are too small to be taken as representing the consumers' opinion still their opinion is worth considering. They expressed that the consumers tend to prefer imported dairy products because of two basic reasons. *Firstly*, the positive image of imported dairy products in the market: high quality, hygienic, healthy, nicely packaged and easy to carry. *Secondly*, the negative image of the local dairy products like: low quality, not easily available and difficult to carry (Annex – 3.2 A**).** Therefore, the corrections in the negative images of the existing local dairy products and also adopting the aspects of the positive images of imported dairy products will be required for fetching the market. Such preconditions are also expressed by the traders. As many as 92 % of the traders expressed their willingness and readiness to sell the local products produced by the proposed dairy cooperative, however, with conditions. Their main conditions are that the products from the plant should be of quality, hygienic and nicely packaged. And all the traders expressed their desire to join the proposed Nangarhar dairy cooperative for doing the business (Annex – 3.2 A).

As many as 73 % of the respondent traders suggested that there is 'room in the market' for new dairy products. The remaining 27 % of the respondent thought that it will be difficult for the new dairy products to enter the market because everything is available in the market (which cannot be empirically verified) and Pakistani dairy products are easily and

abundantly available in Jalalabad market (dominance is visible in the market). Still then, the traders think that new products can enter into the market, specially the products like yogurt, chakka, fresh milk, and milk or yogurt with fruit. The quality of the product is considered as the first condition for market entry followed by 'low price', 'nice packaging' and 'easy availability' (Annex – 3.2 A). Some traders even reported that there will be no competition between the local and imported dairy products in the market because these products are very different, they cater different needs of the consumers and the target consumers are also different.

3.3 Prices of Dairy Products – Consumers' Willingness to Pay

Price of dairy products in Jalalabad market widely varied for different brand of same product and also among different importer/wholesalers and retailers. The magnitude of variation is also very wide. For example, the price of imported powder milk varied from a maximum price of Afs 250/Kg to a minimum of Afs 32.50/Kg. Similar is the case for other imported dairy products (Table 3.3.1). Such variations could be expected in case of some exotic product or internationally renowned brand of product. But, such price situation in a market indicates 'close to monopoly' market situation and also the possibility of selling 'date expired' batch of products. Both the situations are not desirable market situations which need correction. It could be claimed that the dairy products produced and sold by the proposed dairy plant will contribute towards breaking and/or correcting such market situations.

Table – 3.3.1
Wholesale, Retail Price and Margin of Imported Dairy Products in Jalalabad Market, Afghanistan

	Wholesale Price			Retail Price			Retailers' Margin %
Product	**Average**	**Max**	**Min**	**Average**	**Max**	**Min**	
Liquid UHT Milk (Afs./Lit.)	36.23	71.11	23.78	38.61	80.00	29.63	6.16
Powder milk (Afs./Kg)	101.73	240.00	31.11	106.02	250.00	32.50	4.05
Cheese (Afs./Kg)	384.38	645.00	157.14	429.65	700.00	185.71	10.54
Butter (Afs./Kg)	350.00	500.00	200.00	450.00	600.00	300.00	22.22
Yogurt (Afs./Lit.)	70.00			71.67			2.33
Quark (Afs./Lit.)	40.00			50.00			20.00
Cream (Afs./Lit.)	129.79	135.00	127.08	138.20	150.00	129.17	6.09

The buying price of imported dairy products reported by the consumers is slightly higher than the average selling price reported by the trader (Table 3.3.2). Authenticity of such differentials in price could not be cross checked, but the existence of such price differentials is also an indicative of 'imperfection' in the operation of market price

determination due to the monopolistic nature of the dairy market of Jalalabad. Such situation also calls for the corrections to the benefits of the consumers and the farmer producers.

A comparison of price of imported and local dairy products reveals that local products are selling cheaper than the imported products in Jalalabad market. For example, the price of fresh local milk is Afs. 27.25/Lit while it is Afs. 40.29/Lit (average) for imported liquid UHT milk. Similarly, price of local yogurt is Afs. 50.32/Lit but for imported one it is Afs. 71.67/Lit (average). Similar is the case for butter – Afs. 162.16/Kg for local and Afs. 450/Kg for imported one (average)(Table 3.3.1 and Table 3.3.2). Such large price difference between the imported products (comparatively higher) and a local product (comparatively lower) is in favor of local product from competitive position in the market.

Table – 3.3.2
Price of Dairy Product Paid by the Consumer
Jalalabad Market, Afghanistan

Product	Price Afs./Lit./Kg		Wished Price Decrease %
	Local	Imported	
Fresh/Liquid milk	27.25	40.29	15.57
Milk Powder	NA	229.73	11.11
Yogurt	50.32	NA	22.70
Cream	NA	140.5	NR
Butter	162.16	NR	NR

NR = Not Reported; NA = Not Applicable

The consumers wished the price of dairy product would have been less than what they are paying at present – decreased by as much as 23% in the price of yogurt and by 16% in the price of fresh or liquid milk (Table 3.3.2). Such desire on the part of the consumer is very natural. But price consideration for the consumers is of less importance than other considerations while buying the dairy products. All the interviewed consumers expressed their willingness to buy the dairy products of proposed dairy plant but only 6% of them wanted 'cheaper' price. Most of them are more concerned about the 'good quality' product and 'good packing' than the cheap price (Table 3.3.3). It indicates that consumers are willing and ready to pay premium price (high price) for the quality and convenient dairy products.

Table – 3.3.3
Consumers' Condition for Buying From Proposed Dairy Plant
Jalalabad Market, Afghanistan

	% of Interviewed Consumer		Remark
	Yes		
Buy from Nangarhar Cooperative	100.00 %		
	Condition		
	Cheaper	6.06 %	
	Good quality	57.58 %	
	Good Packing	30.30 %	
	Longer keeping	6.06 %	
	Other	100.00 %	Hygienic

4. SUPPLY OF FRESH MILK

A large number of farmers/producers are supplying fresh milk to Jalalabad market. The total number of such farmers and the volume of milk supplied by them could not be ascertained in this short study. However, three levels of estimates – low, medium and high - have been derived based on information provided by the key informants on the present supply situations, indicative co-efficient derived from the farmers' survey and consultation with the Project staff. These estimates are very accurate enough to determine whether or not sufficient volume of milk will be supplied for operating the proposed dairy processing plant in full capacity.

4.1 Present Fresh Milk Supply to Jalalabad Market

A medium level of estimate has been derived based on the present volume of transaction of fresh milk in Jalalabad market and export volume. Farmers are supplying fresh milk to different buyers like the milk shops, institutional consumers and general consumers. An estimate by the key informant farmer/producer indicates that there are 24 fresh milk and local milk products selling shops in Jalalabad city. Four of them are of large size and each of them is utilizing about 875 Lit./day of fresh milk. The other 20 shops are small and each of them is utilizing about 53 Lit./day. These estimates indicate that the total fresh milk supplied to Jalalabad city is 4,560 Lit./day[3]. The quantity supplied and their utilization for different purposes varies with season. The total and such seasonal variations are presented in Table – 4.1.1.

Table – 4.1.1
Supply of Fresh Milk and Seasonal Utilization
Jalalabad Market, Afghanistan

Product	Summer		Winter		Remarks
	Volume Lit./day	Utilization %	Volume Lit./day	Utilization %	
Fresh raw milk	456	10.00	912	20.00	
Cooked milk	912	20.00	912	20.00	
Yogurt	3192	70.00	2736	60.00	
Total	*4560*	*100.00*	*4560*	*100.00*	

The fresh milk is supplied by a number of farmers of Nangarhar province, especially from Beshood and Gojar area. The Guzar Tribal cooperative is the only commercial dairy farm supplying large volume of fresh buffalo milk to those shops – about 3000 Lit./day. Besides, there are three small commercial dairy farms supplying about 500 Lit./day of fresh milk to those shops. The remaining volume (1,060 Lit/day) is supplied by farmers from different districts. Beside these, it is estimated that about 6,000 Lit./day fresh milk is presently exported to bordering market towns in Pakistan from Nangarhar province. On the

[3] *Another estimate is that the total fresh milk supplied to Jalalabad market is 6000 Lit../day which amounts to 180,000 Lit./month. Refer section 6 below.*

other hand, there are some other farmers selling milk in the market that this study could not approach to.

This supply estimate reveals that there is already (at least) 10,560 Lit./day of fresh milk being transacted in Jalalabad market that is double the rated capacity of the proposed plant of 5 Mt./day capacity. Some lead farmers who are presently supplying milk to those shops are found to be willing and ready to supply their milk to the proposed plant. Similarly, the exporter of fresh milk has also assured to supply fresh milk to the proposed plant if they are offered Afs 25/Lit of fresh milk. Therefore, some of the presently sold fresh milk could be coming to the dairy plant but not all. It could be guessed that about 5,394 Lit./day[4] will be coming to the proposed plant which is more than sufficient enough to run it in one shift full capacity.

4.2 Present Production and Marketable Surplus of Fresh Milk

The other estimates of supply of fresh milk at low level are derived from the information gathered on the exiting cattle population of the small stakeholders in the Project districts. The estimated existing number of cows with the small holders, their breeds and total production of milk in summer and winter at present in five Project districts are presented in Annex – 4.1.A. There are 1765 cows producing 5,600 Lit./day in summer and 4,450 Lit./day during winter. All this volume of marketable surplus of the farmers cannot be expected to be collected by the proposed plant because some volume is retained by the farmers for their family consumption. The estimates are presented in Table – 4.2.1.

Table – 4.2.1
Present Level of Milk Production of Small Farmers in Five Districts of Project Area Nangarhar Province, Afghanistan

Total number of cow at present	Total production of milk Lit./day		Total volume of marketable surplus (54.93% of total production) of milk Lit./day		Total Marketable Surplus Average Lit./day
	Summer	Winter	Summer	Winter	
1,765	5,600	4,450	3,076	2,444	2760

Interviews with the farmers reveal that about 45.07% of total production is consumed at the farm by the farmers' family and remaining 54.93% constitute their marketable surplus(Annex – 4.1.B). Thus, on the average 2,760 Lit./day could be available for the collection by the proposed plant(Table – 4.2.1). Besides, if it is assumed that 500 Lit./day of fresh milk presently supplied to the milk shops is accounted to this present production level (refer above section 4.1), then the volume available for the proposed plant will be further reduced to only 2,260 Lit./day. Therefore, the present level of production of small holders alone could be sufficient enough for starting up the proposed plant of 5 Mt./day capacity. The volume required for the full capacity operation of the plant could be very easily achieved when this present production level is increased in the near future with the supports of the Project and/or certain volume from the presently supplied fresh milk to the milk shops is diverted to the

[4] Half of the exported volume (3000 Lit./day), and 75% (2,394 Lit./day) of the fresh milk presently used for yogurt making because some volume of yogurt production at the present method will be replaced by the hygienic production system of the proposed plant. Refer also Section 6 below.

proposed plant. Accordingly, the Project has adopted very appropriate working strategy to "improve production and efficiency of milk production by developing a commercial dairy production system in selected locations in Nangarhar province" The Project is thus supporting to increase the number of cows, number of farmers keeping animals, increase total production and productivity/animal through its 'integrated production scheme'.

4.3 Potential Future Milk Supply

The Project has set the target to collect 1.7 million Lit. of milk from 1,500 beneficiary farm families of six districts through 15 milk collection centre (MCC). When the targets are met, the milk collection by 2013 (end of the Project) will be 4.65 Mt./day which alone should comfortably provide a profitable volume of milk for a 5 Mt./day rated processing capacity plant. The collection of that volume of milk through 15 MCC could be conveniently done as it requires collection of 310 Lit./day milk from each of the MCC. The experiences from Balkh, Kunduz, Kabul and Herat show that the collection of 310 Lit./day milk could be very easily managed and achieved. But the potentials of supply of fresh milk to the proposed plant of 5 Mt./day capacity is much larger than such postulations, and also higher than the existing production and supply of milk presented in sections 4.1 and 4.2 above.

Table – 4.3.1
Potential Milk Supply from Targeted Farm Households of the Project in Six Districts of Nangarhar Province, Afghanistan

Total number of HH targeted	Number of HH with marketed surplus (66.20% of target)	Total production of milk Lit./day/HH		Total volume of marketable surplus (54.93% of total production) of milk Lit./day		Total Marketable Surplus of milk Lit./day
		Summer	Winter	Summer	Winter	
1500	993	21,578 @21.73 Lit./day	15,193 @15.30 Lit. day	11,852	8,346	20,198

The potential supply of milk in future is estimated as follow based on the information gathered through the farmers' survey. It is found that presently each farm household in the Project area, on the average, is selling 6.43 Lit./day (8.9 Lit./day during summer) of milk during winter. However, all the farmers are not selling milk. The proportion of farmers having marketable surplus is 66.20% of total farm household. Further, all these household consume 45.07% of their marketable surplus (total production minus certain wastages) at the farm by the farmers' family. Their net marketed surplus is the remaining 54.93% of their total production. When the Project reaches to 1,500 farm families as targeted, then the estimated marketed surplus that could be procured by the proposed plant is estimated at 11,852 Lit./day during summer and 8,346 Lit./day during winter. More importantly, the farmers have confidently expressed their willingness to supply such required volume of milk to the plant through the MCC and waits for that to happen soon. Such potential supply of fresh milk in the future indicates that the proposed plant should be build/established with ample provisions for future expansion. Also there is request to extend the project to other districts of Nangarhar province and Lagman and Kunar province , therefore a more than 10 MT/day processing facility would be required if milk is to be collected from the neighbouring provinces of Kunar and Laghman. Also, proposed Jalalabad dairy plant could also serve as a

feeder and feeder balancing dairy for larger Kabul market; thus the plant capacity could even be upto 20 MT/day.

During the discussion, it was also reported that sweetened condensed milk was used extensively during Russian time in Afghanistan; and consumers were very much used with the product. Also, there is lots of condensed milk marketed and consumers are buying it. If similar products are introduced in the market, there will be a demand. As well, condensed milk could be part replacement for the UHT milks.

5. EXPORT/IMPORT OF DAIRY PRODUCTS

The total foreign trade of Afghanistan is very largely directed towards the neighboring countries, especially Pakistan, India and Iran. These three countries accounted for more than 76% of total exports and 18 % of total imports of Afghanistan in the year 2009-10. And Pakistan alone shared more than 47 % of the total export and 9 % of the total imports during the same year.

5.1 Imports of Dairy Products

Available national statistics indicate that Afghanistan imported 4,178 Ton of dry powder milk in 2009-10 (less than half of 2008-09 imports) valued at 1.83 US$/Kg (Annex - 5. A). Besides powder milk, Afghanistan imports varieties of dairy products in three product categories - milk and cream (HS product code 0402), Buttermilk and yogurt (HS product code 0403) and Cheese and curd (HS product 0406). The data published by ITC (International Trade Centre) on import and export of dairy products to/from Afghanistan also clearly indicate such concentrated 'trading partnership' with Pakistan, although Afghanistan is importing dairy products from more than 31 countries every year. The share of Pakistan alone in the total imports of milk and cream (HS product code 0402), Buttermilk and yogurt (HS product code 0403) and Cheese and curd (HS product 0406) respectively was 43%, 35% and 76% during the year 2009-10. On the other hand, Uzbekistan alone shared more than 53 % of the total import of Buttermilk and yogurt (HS code 0403) (Annex – 5. B).

Such trading partnership is also highly discernable in Jalalabad market, and especially so in the case of liquid UHT milk, powder milk and cream. A wide range of dairy products imported from those three countries are easily available in Jalalabad market. And the most prominent ones, both in terms of quantity and variety, are coming from Pakistan. Both the UHT liquid and powder milk and packed yoghurt are directly imported (official as well non-official channels) from Pakistani border markets. Other dairy products like cheese, butter and ghee of Iranian and Indian origin are also available in the market but are not directly imported into Jalalabad market.

5.2 Export of Fresh Milk to Neighboring Border Market

Some fresh milk across the border towns of Pakistan is exported in a very scattered way due to open border. The main exporter is the Guzar Tribal Dairy Cooperative in Behsood district, only two Km away from Jalalabad city. The 300 Households member of this Cooperative are raising 8,000 buffalo for milk purpose and producing 5000 Lit./day. This cooperative is regularly supplying 3,500 Lit./day of fresh milk (of buffalo) to large town in

Pakistan across the border. They reported that they have to export the fresh milk across the border because there is not sufficient demand for fresh milk in Jalalabad.

5.3 Export of Dairy Products to Neighboring Border Market

Quart or Quroot (dry yoghurt) is the only dairy products exported from Jalalabad. It is a very important dairy product item produced and marketed in Jalalabad city. It is produced in and around Jalalabad as well as supplied from east-central part of Afghanistan. The product is assembled in a specialized Quart wholesale market located in Jalalabad. It is then exported to Pakistan, especially to Peshawar and other bordering markets. One wholesaler dealing in Quart since last eight years reported that he alone sells (most of it exported) about 1845 Kg./month during the six months period of Spring and Summer and 6,300 Kg./month during three months period of winter. He purchases Quart at 85 Afs./Kg. from the farmers/producers and sales at 90 Afs./Kg. at wholesale rate (average transport cost he incurs is 2 Afs./Kg.). The retail price of Quart in Jalalabad market ranges from 100 to 150 Afs./Kg.

5.4 Export/Import Cost

Export of fresh milk and all dairy products from Afghanistan to any allowable destination is free, though some costs, apart from the transportation cost, are always involved while crossing the border. For example, the Guzar Tribal Dairy Cooperative is incurring a total cost of Afs. 1.02/Lit of milk for delivering fresh milk to Laurga market in Pakistan. (The transportation cost paid by them to the hired 'pick-up' vehicle from Jalalabad to Laurga (Laurga is center of Landi Kotal and is close to Torkham boarder) comes to Afs. 0.86 /Lit. and border crossing cost is Afs. 0.16/Lit. of milk[5]). Their selling price is Afs. 27.80/Lit (Pure undiluted with water)[6]. Thus, they are getting Afs. 26.78/Lit. of fresh milk (buffalo) by exporting to Laurga. This unit price could be taken as a guiding price while determining the procurement price of raw milk by the proposed dairy plant.

The imports are not free. The tariff imposed by the government is: 4% of import value as 'import tax'; 10% of import value as production or 'excise duty'; and 0.2% of value as 'benevolence fee' or red-cross fee. Thus, the total import duty and/or fees on dairy products is quiet low – only about 15% of the value of the import. And the valuation of the imports is done based on Government fixed 'price for export/import valuation' which is always significantly lower than the prevailing market price. The transport cost of UHT tetra packed

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[5] The export of dairy products from Afghanistan is free. But they are giving 20 Lit. of milk free of cost for a vehicle crossing the border carrying 3500Lit. of milk. Certain 'service' charges are collected informally.

[6] They could also sell the milk at Afs. 18.53/Lit. by diluting with the water, specially to the tea shops across the border market. In that case they get Afs. 17.56/Lit. of milk.

liquid milk from nearest Pakistan border market to Jalalabad amounts Afs. 1.35/Lit[7]. There are not any 'significant' non-tariff barriers in the export and import of dairy products from/to Afghanistan.

5.5 The Importer

The import of dairy products into Jalalabad market from the neighboring countries, particularly from Pakistan is quite organized – both in the formal and informal sector. In the formal sector, there are two channels for import: a) registered agent in Nangarhar of established dairy industry like Nestle, Engrofood and Noorpur. Such agent directly imports from the company's subsidiaries plants in Pakistan and they often are the company's representative in Jalalabad market or for Afghanistan; b) Importer trader in Nangarhar who imports through the company's agent or distributor in Pakistan. Both of these channels import dairy products by fulfilling all the legal requirements to import into Afghanistan – adhering to both tariff and non-tariff requirements. Another channel is 'informal sector' comprised of two different channels: a) Direct calling or self importing trader who imports through their wholesaler or 'general merchant' type counterparts in Pakistan. They try to escape the legal requirements as much as possible to save the import cost; and b) Gandi Wala are the petty traders scattered along the border markets who brings small consignment of products very informally by not paying any tax or fees. They often are categorized as illegal channel for importing dairy products.

5.6 Export Promotion Consideration

Apart from the conducive export environment created by the Government's agricultural export promotion policy and strategy, the proposed dairy plant could also take advantage of the special nature of Jalalabad market arising due to its proximity to the bordering markets of Pakistan, and therefore consider planning for export of dairy products as well. There are following special opportunities and advantages for incorporating such export promotion plan:

a) The transport cost to bordering Pakistani market is very low due to proximity;
b) The cost will be further reduced and accessibility improved with the completion of the upgrading of the highway connecting Jalalabad with Torkham in very near future;
c) Export cost virtually is the transportation cost only;
d) Export trading system of fresh milk and some dairy products already established and operational;
e) There is high demand for fresh milk and dairy products (fresh homogenized milk, yogurt, quark, butter, cream and cheese which will be produced by the proposed plant) across the border towns;
f) Existence of well established and functional marketing system for trading across the border including of dairy products both in formal and informal sectors;

[7] *Transport cost is calculated at Afs. 50,000/container carrying 5,500 carton of milk equivalent to 37,125 Lit., thus costing Afs. 1.35/Lit. of milk.*

g) Existence of certain level of import duties and fees which could be made more conducive for export promotion;
h) Potentials for earning foreign exchange which the country is in dire need to balance its trade deficit; and above all,
i) The trading system operating between the two countries' border markets is characterized by free movement of people, products and payments that reinforces easy and attractive flow of fresh/raw milk and milk products.

The existence of such export potentials will need further verification. More importantly, further detail analysis of the situations to develop practical and feasible actions to take benefits from those opportunities as well as to identify the constraints is required. Thus, a detail study and understanding of the dairy market and marketing situations of across the border towns (including of Peshawar market) by the national project staff could be very effective for venturing into the export promotion strategy of the proposed plant.

6 MILK PROCESSING AND THE MILK SHOPS

There is no dairy processing plant in Nangarhar province that process milk and produces and sells dairy products to consumers in Jalalabad city. However, some value adding activities on fresh milk purchased from the farmers are carried out in Jalalabad city. Most such activity is carried out by the fresh milk wholesale or retail shops scattered all over the city. It is estimated that there are about 24 such shops of different sizes, mostly selling fresh milk on daily basis, and also making some products like yogurt, cream, quark and cheese.

6.1 The Cheese Making

Apart from the 24 milk shops located inside the Jalalabad city, there are two very small cheese making units in Nangarhar Province. One is located at Qala Akhund in Kama district and the other one is at Fatih Abad in Surkhrood district. Both the units are managed and operated by two separate women group and both have equal processing capacity of 50 Lit./day of fresh milk. They collect milk from the farmers around their unit. It was reported that one of the unit is producing special goat cheese and selling to the specialty shops in Kabul. Their product does not enter into Jalalabad market, nor is their purchase of fresh milk is substantial enough that may have impact on the operation of proposed plant of 5 Mt/day capacity. Besides, small amount of cheese is produced in Khewa district.

6.2 The Milk Shops

The 24 milk shops are the buyers of fresh milk from the farmers, and suppliers of fresh milk and local milk products to the consumers in Jalalabad market. They are doing the dairy business in the city since long time. According to the Jalalabad Municipal official, four of those shops are 'big' and each one of them can utilize 500 Lit. of fresh milk a day. Other 10 are categorized as 'middle sized' shops and each one uses up to 250 Lit./day of fresh milk. And the remaining 10 shops are of 'small' size using 150 Lit of fresh milk a day. The total fresh milk utilized by those 24 shops adds up to 6000 Lit./day.[8]

[8] *.Another estimate for total milk utilization by those 24 shops is 4560 Lit./day of fresh milk. Refer section 4.1 above.*

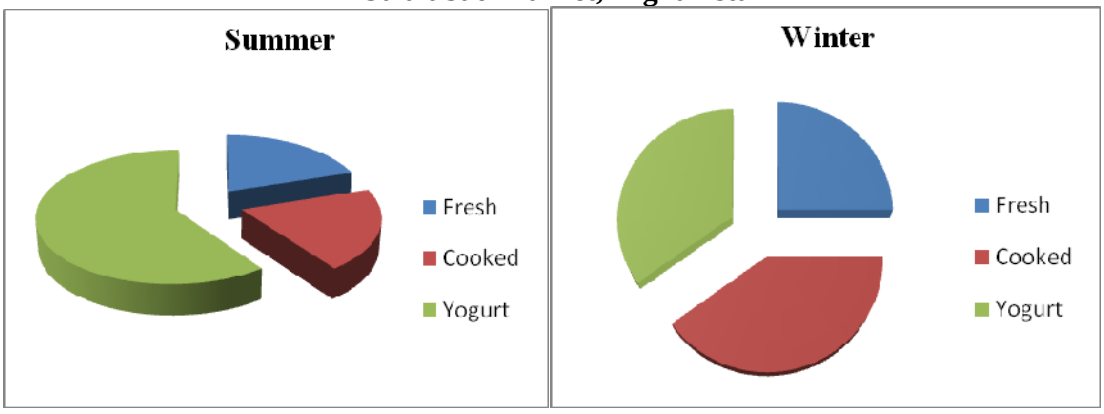
The fresh milk supplied is basically utilized for three purposes: sold as fresh milk or cooked milk or making and selling of yogurt. The estimates of the utilization in those purposes and during the summer and winter are presented in Table – 6.2.1.

Table – 6.2.1
Utilization of Fresh Milk by the Milk Shops
Jalalabad Market, Afghanistan

Product	Summer		Winter		Remarks
	Volume Lit../day	Utilization %	Volume Lit/day	Utilization %	
Fresh raw milk	1200	20.00	1500	25.00	
Cooked milk	1200	20.00	2400	40.00	
Yogurt	3600	60.00	2100	35.00	
Total	***6000***	***100.00***	***6000***	***100.00***	

During winter major part of the fresh milk is utilized in selling of cooked milk, while during summer most part is used for making yogurt. Consumption of fresh milk is not significantly different during the summer and winter as for cooked milk and yogurt – the demand for fresh milk tend to remain stable over the seasons. The utilization of fresh milk by the Milk Shops is clearly depicted in Figure – 6.A.

Figure 6 – A
Utilization Pattern of Fresh Milk by Milk Shops
Jalalabad Market, Afghanistan



6.3 Yogurt Making

Another value adding activity is the yogurt making by the traders of different sizes within Jalalabad city. It is estimated that 35 % of the total fresh milk supplied during winter (2,100 Lit./day) and 60% in summer (3,600 Lit./day) is utilized for preparing yogurt. Refer section 4.1 above as well. The farmers deliver milk at the shop on daily basis and many of them have established a kind of 'contractual arrangement' with the farmers for the daily supply. One of the shop was found using powder milk in preparing yogurt. The field survey revealed that the making and selling of yogurt is very crude and very un-hygienic as can be clearly observed in the photo. In spite of such situations, the demand for yogurt is increasing every year. The production by those traders and their sales are also increasing, and they plan to expand the business. Most of them sell the product themselves through a small retail outlet while few of them are operating as wholesaler/yogurt maker. Many of them are planning to upgrade their retail outlet because the market for yogurt is expanding – one estimate is 50% increase in demand for yogurt. But they are constrained by the high rent of the shops, dirty roads, lack of refrigeration and other required tools and machinery like weighing machine. Such constraints will also have to be addressed by the proposed plant for establishing retail outlets for its products. There are few yogurt makers who are making yogurt cleanly and hygienically, but the traders/processors of yogurt and the consumers at large very clearly articulated the need for giving up the present crude method of manufacturing yogurt. The proposed dairy plant will help correct this situation. And also, will easily establish itself in the market with its hygienically produced yogurt.

6.4 Other Products

Apart from the production of yogurt and cheese mentioned above, one trader reported producing about 112 Lit./day of quark/dough during the summer months. Another one produces about 16 Lit./day of cream as often time all the procured milk cannot be sold in fresh form to the consumers. Similarly, still another one produces about 0.5 Kg./day of local cheese from the un-sold fresh milk. These are very insignificant processing efforts and volume of production as well. And such efforts are undertaken only when milk could not be sold in fresh form.

6.5 Price of Milk and Processed Products

The milk shops on the average are paying Afs. 23.75/Lit for fresh milk to the farmer. It varied from Afs. 16.22 to 29.73/Lit of fresh milk depending on the extent of 'mixing water' and other quality consideration by the shops, and the business relation between the buyer and the seller. The wholesale and retail prices of different dairy products reported by the processor/milk shop keepers are presented in Table 6.5.1.

Table – 6.5.1
Price of Fresh Milk and Milk Products
Jalalabad Market, Afghanistan

Dairy Product	Price of Fresh Milk as Raw Material	Wholesale Price	Retail Price	Retailers' Margin on Wholesale Price in %
Fresh milk Afs./Lit.	23.75	25.20	30.63[9]	21.55
Yogurt Afs./Lit.	23.75	21.62	27.26	26.09
Cheese Afs./Kg	23.75	105.00	150.00	42.86
Cream Afs./Lit.	23.75	90.00	108.00	20.00
Qurak Afs./Lit.	23.75	59.46	64.86	9.08

The Government has fixed the price for fresh milk in Jalalabad market at Afs. 21.50/ Lit but the farmers are getting 10.46% more than that price from the wholesaler and the consumers are also buying at 42.47% higher than such fixed price from the retailers. A close monitoring of such external price determination will be required while operating the proposed plant and necessary policy dialogue with the Government will also be required to maintain such price at a "conducive to all" level.

The prevailing market prices of different dairy products are lower than the prices of imported products. Those price levels have to be taken into consideration while fixing the price of the products of the proposed dairy plant.

6.6 Marketing Channel of Dairy Products

Apart from the price consideration for launching the products from the proposed dairy plant, it will be very crucial to consider the marketing channel of dairy products. The present channel of marketing of fresh milk, local and imported dairy products are presented in Figure - 6.6.A.

MCCs are the 'life line' for the supply of fresh milk from the farm level to the proposed processing plant. Similarly, the existing Milk Shops could become the 'connecting link' between the plant and the consumer. Both channels – supplying milk to the plant and delivering final products to the consumers – are equally important. Therefore, the processing plant will need to develop and establish a network of retail outlet similar to the network of MCC. The existing Milk Shops in Jalalabad city could be utilized for this purpose as many of them have articulated their willingness to improve their shops and handle the products

[9] *The price quoted is Afs. 150/md=7Kg.*

coming out from the proposed plant. Different arrangements could be devised for them to sell the new products. And the most prevailing system in the market is to provide certain level of commission or margin to the retailers. The prevailing margin of the retailers on the wholesale price level is also presented in Table – 6.5.1. The margin is different for different products ranging from only 9% in the case of Quark to 42.86% for cheese. Those margins seem very high which practically will not be possible to provide to them. The Cooperative and/or the plant has to devise a agreeable level of margin for the retailers that will encourage them to handle the products produced by the proposed plant.

7. SMALLHOLDER PARTICIPATION IN THE DAIRY MARKETING SYSTEM

Inclusion of smallholder milk producers in the dairy marketing system, particularly their participation in the proposed Nangarhar Dairy Cooperative to undertake integrated dairy business (production, collection, processing and marketing of fresh milk and animal feed along with the provision of animal health services) is one of the main strategies of the Project. A number of program activities are implemented with a very encouraging participation of the small holder farmers which is enabling and strengthening them to participate in the marketing system of the fresh milk and dairy products. This market study has briefly analyzed the situation in this regard by adopting the partial SWOT (Strengths, Weakness, Opportunity and Threat) analysis process[10].

7.1 SWOT Analysis (Strengthen, Weakness, Opportunity and Threat)

The SWOT exercise is done by the members of the Farmers' Cooperative, especially those representing the proposed milk collection centre (MCC). One each focal person/farmer from proposed 15 MCC of five district Cooperatives (of Behsood, Kama, Surkhood, Batikot and Ghanikhel) participated in the exercise. All the Project staff facilitated them to identify and conclude on the Strengths, Weakness, Opportunity and Threat. The results are presented below.

[10] *SWOT exercise was done only to identify and consensually agree on the Strengths, Weakness, Opportunity and Threat for small holders' participation in the dairy marketing system. Other steps like solutions identification and formulations of strategy and action plan were not undertaken.*

SWOT Analysis for
Smallholder Participation in the Dairy Marketing System of
Jalalabad (Nangarhar), Afghanistan

Strength	**Opportunity**
1. Keeping milking cow has long history in the society. 2. Farmers' dairy cooperatives are established and their number and farmers joining it are increasing. 3. Some farmers have improved milking cow housing system. 4. There are absorbable improvements in dairy breeding and animal health services. 5. Considerable interest of the whole farm family in dairy husbandry. 6. Increment in number of milking cows and milk production. 7. Increased awareness and knowledge of farm family for keeping milking cow. 8. Farmers can also locally process milk in their houses. 9. Farmers are capable to collect milk and willing to sale surplus milk.	1. Abundance of resources to keep milking cows. 2. Farmers are mentally prepared for rearing milking cow. 3. There are good roads and improved transportation and communication system available. 4. Farmers' cooperatives stand ready to help and support the dairy farmers. 5. FAO project providing opportunities for dairy development in Nangarhar. 6. There are many NGO, INGO and UN/FAO to provide supports to dairy farmers.
Weakness	**Threat**
1. Drinking water is not available for whole day. 2. Majority of farmers have traditional and un-healthy milking cow sheds.. 3. Veterinary services and AI are not available on time and farmers do not treat and vaccinate cows on time. 4. Less or no knowledge about animal feeding and milking system and improved and healthy feed are not available. 5. Farmers do not improve local cow to good and improved breed. 6. No markets for selling milk. 7. Low yield per cow. 8. No milk processing centre and local processing system is unhealthy and non-professional. 9. Less knowledge among farmers about heat detection, lactation period and infertility. 10. Experience has not been shared with each other. 11. No plan and management for keeping milking cow.	1. Status of insecurity. 2. Natural disaster like drought, lack of irrigation water and epidemic diseases. 3. Strong market competition. 4. Lack of coordination among farmers' cooperatives. 5. Lack of quarantine capacity and influx of infected animals from open border. 6. Lack of professional animal husbandry person.

A number of indicators identified during the SWOT exercise are related to the milk production activities. The small farmers wanted or needed to increase the production because their 'marketable surplus' is low and the 'marketed surplus' is even lower. The average farm family size is large and major volume of produced milk could be consumed on farm to maintain the nutrition level of family, especially of the children. Furthermore, the difficulties encountered in selling the fresh milk often entice them to domestically process the fresh milk which further reduces their 'marketed surplus'. As a result, the small farmers have identified 'absence of markets' for selling milk as their main weakness. It is hoped that with increased production and the establishment of MCC as an immediate market outlet at the farm level, the small farmers will be able to increase their 'marketable surplus'. And the operation of proposed dairy processing plant will further support them to increase their 'marketed surplus' as well. Most of other weaknesses are already being addressed by the program activities. Also, the Project is strengthening and increasing the capabilities of the small farmers to harness the identified opportunities. The farmers have also identified the need for maintaining coordination within the Cooperative members and among the Cooperatives, particularly through the 'experience sharing' method to enhance their market participation.

8 SUMMARY, CONCLUSION AND RECOMMENDATION

Size of the Market:

The existing and potential demand for fresh milk and milk products in Jalalabad market has been estimated by adopting two different approach and process based on the number of urban household of Jalalabad city and their present consumption pattern. And two levels of demand have been arrived at – lower and upper level – to assess the size of the Jalalabad dairy market in terms of total consumption of milk and milk products.

General consumer:

The estimated urban household of Jalalabad city is 24,088, and a HH on the average purchases 1.82 Lit./day of fresh milk. Thus, the potential size of the Jalalabad market is 43,840 Lit./day of fresh milk plus other dairy products. This is upper level of estimation, but is at low volume, because it excludes the nomadic population. On the other hand, the lower level estimation is derived by excluding those HH who at present are buying the imported dairy products only. About 39.13% of total HH falls in this category. Thus, the lower level estimation comes to 26,684 Lit./day of fresh milk. Similarly, the potential demand for yogurt is 41,190 Lit./day, cream is 3,011 Lit./day and butter is 819 Kg./day. These estimates are on low volume side as well because the estimates are based on the present consumption (demand) level and pattern which is constrained by many factors. Dairy products like quark, cheese, ghee, etc. presently, are not easily available in the market. *Improvements in these constraining situations and availability of different dairy products with the establishment of proposed dairy plant will result in substantial increments in the number of consumer, number of dairy products consumed as well as in the volume of their purchases.* Evidently, the existing and potential demand for fresh milk and dairy products is substantially greater than the estimated daily production capacity of the proposed dairy plant. Above all, there are three very good prospects for the increase in the demand for dairy products in the future in Jalalabad market: a) the demand for fresh milk and dairy products is continuously increasing over the years; b) there are shortages in the supply of different dairy products; and c) the

Consumer Price Index reveals that the consumption of fresh milk and dairy products are very important food item for an Afghan.

Recommendation 1:

The analysis of demand side of the market reveals that the present and potential demand for fresh milk and milk products in Jalalabad market is lot larger than the rated production capacity of the proposed dairy plant. Thus, from the market demand perspectives, establishment of the proposed plant of 5 MT/day capacity is highly justified. The analysis further indicates towards the potentials to establish even larger size dairy processing plant. A more than 10 MT/day processing facility would be required if milk is to be collected from the other districts of Nangarhar provinces including from the neighbouring provinces of Kunar and Laghman. Also, proposed Jalalabad dairy plant could also serve as a feeder and feeder balancing dairy for larger Kabul market; thus the plant capacity could even be upto 20 MT/day. The multi-product plant should also include the required facility for the production of plain and sweetened condensed milk in appropriate type of packaging. If the volume of desired quality milk production and collection increases, even long-life milk products should be considered in the follow-up phase of the project.

Institutional consumer:

There is still another part of the market demand for dairy products that is of the 'institutional consumer' which is not included in the above estimation. Majority of this consumer group at present are using imported dairy products, specially powder milk (1314 Kg./day) and UHT liquid milk (161 Lit./day) as a substitute for homogenized and hygienic fresh milk due to easy access, convenience and easy handling. Many institutional consumers do not prefer local product basically due their perception of local product as unhygienic and without standard.

Recommendation 2:

The concerns of the institutional consumers regarding the local dairy products should be addressed by the proposed plant which could encourage them to buy local dairy products.

They expressed their willingness to buy the products of the proposed plant if the products are: a) of good quality; b) of high standard and packing; and c) possibly at lower price. All of them also thought that establishment and operation of a dairy plant is necessary because: a) they are not satisfied with present quality of local products available in the market; b) it will be better for the economy; c) abundant fresh milk is available for processing; and d) is the need of the market.

Recommendation 3:

Appropriate marketing strategies to attract institutional and other consumers towards the product of the proposed plant should be adopted to substantially expand the size of the market.

Share of imports in total demand:

Large quantities of dairy products are imported into Jalalabad. But all the imported products are not sold in Jalalabad market. Some are sent to other markets like Kabul. The quantity sold in Jalalabad market (about 10,125 Lit. imported liquid UHT milk and 4,500 Lit. of imported cream during summer and 6,000 Lit. in winter months) constitutes only a small

fraction of the existing lower level of total potential demand. Even if all that is imported into Jalalabad (146,115 Lit./month or 4,871 Lit./day) is sold in Jalalabad market, still the imports constitute less than 19% of the demand in the case of cream and liquid UHT milk. Such share of butter, quark and yogurt is even very insignificant. On the other hand, the share of import of cheese in total demand is substantial because there is only a very negligible quantity of domestic production of cheese in Nangarhar province. Similar is the case with the powder milk.

Recommendation 4:

From the competitive perspective and in terms of market share of imported products, the proposed plant should be prepared to face strong competition from imported cheese, medium scale competition in the case of cream and no competition for yogurt, quark and butter.

On the other hand, there is substantial unmet demand for dairy products in Jalalabad market which could provide sufficient room in the market for the new entrance. Above all, the imported products are highly priced compared to local products. Some traders even reported that there will be no competition between the local and imported dairy products in the market because these products are very different and they cater different needs of the consumers and the target consumers are also different.

Recommendation 5:

In general, the proposed plant of 5 MT/day capacity does not need to worry much about the competition from the imported dairy products in Jalalabad market. If the areas are expanded, in that case, the capacity could be double and 10 MT/day. Condensed milk could contribute to partially substitute the UHT milk.

A very clear seasonal variations in the demand for yogurt, cream and liquid UHT milk is noticed. These products have high demand during winter season. Such seasonal variation is negligible in the case of cheese, quark, butter and dry milk powder.

Recommendation 6:

The production planning of the proposed dairy plant should address the seasonality in the demand for dairy products – larger quantity of yogurt should be produced and sold during summer but cream and butter milk (dough) during the winter season.

Consumers' preference:

Consumers are 'not satisfied' with the present local dairy products mainly due to their poor quality and un-hygienic handling The proposed dairy plant producing homogenized fresh milk and hygienically producing and handling dairy products will meet the present un-fulfilled consumers' preference. Although 'not satisfied' with present local dairy products, the consumers preferred local dairy products as against imported ones because of their quality of being 'fresh' (most preferred), 'good taste' (second preference) and 'cheap' (third preference). *Thus, this study verifies that in the case of Jalalabad market consumers' do not necessarily prefer to buy imported dairy products over the local products.*

But there is positive image of imported dairy products in the market like: high quality, hygienic, healthy, nicely packaged and easy to carry. Also, there is negative image of the local dairy products like: low quality, not easily available and difficult to carry.

Recommendation 7:

The corrections in the negative images of the existing local dairy products and also adopting the aspects of the positive images of imported dairy products will be required for fetching the market.

Such preconditions are also expressed by the traders. As many as 92 % of the traders expressed their willingness and readiness to sell the local products produced by the proposed dairy cooperative, however, with conditions. Their main conditions are that the products from the plant should be of quality, hygienic and nicely packaged. Some traders reported that the consumers prefer local product over the imported ones also because the local products are 'own' (Afghani) products.

Recommendation 8:

Such consumers' emotion or attachment is a strong competitive edge and should be utilized by the proposed dairy plant for the market entry of its products.

Prices of dairy product:

A comparison of price of imported and local dairy products reveals that local products are selling cheaper than the imported products in Jalalabad market. For example, the price of fresh local milk is Afs. 27.25/Lit while it is Afs. 40.29/Lit (average) for imported liquid UHT milk. Similarly, price of local yogurt is Afs. 50.32/Lit but for imported one it is Afs. 71.67/Lit (average). Similar is the case for butter – Afs. 162.16/Kg for local and Afs. 450/Kg for imported one (average).

Recommendation 9:

The large price difference between the imported products (comparatively higher) and local products (comparatively lower) are in favor of local product from the competitive position in the market and the proposed plant should maintain it to attract the consumers.

Only a very few consumers wanted further reduction in the price of the local products but their main considerations for buying the local product are 'good quality' and 'good packing'. Thus, from the price perspective the local products can easily compete with the imported products in Jalalabad market.

Price of dairy products in Jalalabad market widely varied for different brand of same product and also among different importer/wholesalers and retailers. The magnitude of variation is also very wide. Such price situation in a market indicates 'close to monopoly' or 'imperfections' in market situation and also the prevalence of selling 'date expired' batch of products. Both the situations are not desirable market situation which needs correction.

Recommendation 10:

The *dairy products produced and sold by the proposed dairy plant should (will) contribute towards breaking and/or correcting such imperfect market situations.*

Supply of Fresh Milk:

Three levels of supply estimates – low, medium and high - have been derived based on information provided by the key informants on the present supply situations, indicative co-efficient derived from the farmers' survey, and consultation with the Project staff. These

estimates are very accurate enough to determine whether or not sufficient volume of milk will be supplied for operating the proposed dairy processing plant in full capacity.

The low level of supply estimation is derived from the existing cattle population with the small holders in the five Project districts. There are 1765 cows producing 5,600 Lit./day in summer and 4,450 Lit./day during winter. Survey has revealed that farmers consume about 45.07% of their production at the farm level and 54.93% is sold out. Thus, on the average 2,760 Lit./day could be available for the collection by the proposed plant – 3076 Lit./day during summer and 2760 Lit./day during winter. Besides, if it is assumed that 500 Lit./day of fresh milk presently supplied to the milk shops is accounted to this present production level, then the volume available for the proposed plant will be further reduced to only 2,260 Lit./day.

Recommendation 11:

T*he present level of production of small holders alone is sufficient enough for commissioning the proposed plant of 5 Mt./day capacity. But the volume required for the full capacity operation of the plant should be achieved by increasing the present production level with the integrated supports scheme of the Project. Also, full capacity operation should be achieved by attracting certain volume from the presently supplied fresh milk to the milk shops.*

A medium level of estimate has been derived based on the present volume of transaction of fresh milk in Jalalabad market and export volume. The 24 fresh milk and local milk products selling shops are using 4,560 Lit./day of fresh milk. Another estimate of utilization by the same 24 shops is 6000 Lit./day. And about 6000 Lit./day fresh milk is exported to bordering town of Pakistan. Thus, there already is 10,560 Lit./day to 12,000 Lit,/day of fresh milk being transacted in Jalalabad market. *It is estimated that about 5,394 Lit./day could be diverted to the proposed plant which is more than sufficient enough to run it in one shift full capacity.* Because, the exporter is willing to supply at least 3000 Lit/day fresh milk if he is paid Afs. 25/Lit of fresh milk. And 75% (2,394 Lit./day) of the fresh milk presently used for yogurt making will be diverted because that volume of yogurt production in the present method will be replaced by the hygienic production system of the proposed plant.

Recommendation 12:

Even the medium level of supply estimate of fresh milk which is already available in the market is sufficient enough for establishing and operating the proposed dairy plant of 5 Mt./day fresh milk processing capacity.

But the supply potential is very large. The high level of estimation is derived as follow: The Project has set the target to collect 1.7 million Lit of milk from 1,500 beneficiary farm families of six districts through 15 milk collection centre (MCC). But the potential is lot larger than that volume. It is found that presently each farm household in the Project area, on the average, is producing/selling **6.43 Lit./day (8.9 Lit./day during summer**) of milk during winter. But only 66.20% of the farmers are having 'marketable surplus' while their 'marketed surplus' amounts to 54.93% of their total production. Taking these indicators it is estimated that the proposed plant will be able to collect 11,852 Lit/day fresh milk during summer and 8346 Lit./day during winter when its target of reaching to the 1500 farm household is achieved at the end of the Project.

Recommendation 13:

Such potential supply of fresh milk in the future indicates that the proposed plant should be build/established with ample provisions for future expansion.

Export/Import of dairy products:

The total foreign trade of Afghanistan is very largely directed towards the neighboring countries, especially Pakistan, India and Iran. These three countries accounted for more than 76% of total exports and 18 % of total imports in 2009-10. And Pakistan alone shared more than 47 % of the total export and 9 % of the total imports during the same year. The share of Pakistan alone in the total imports of milk and cream (HS product code 0402), Buttermilk and yogurt (HS product code 0403) and Cheese and curd (HS product 0406) respectively was 43%, 35% and 76% during the year 2009-10. On the other hand, Uzbekistan alone shared more than 53 % of the total import of Buttermilk and yogurt (HS code 0403). Such trading partnership is also highly discernable in Jalalabad market, and especially so in the case of liquid UHT milk, powder milk and cream.

Some fresh milk across the border towns of Pakistan is exported freely from Nangarhar Province due to open border. They reported that they have to export the fresh milk because there is not sufficient demand for fresh milk in Jalalabad. Quart or Quroot is the only dairy products exported from Jalalabad to Pakistan, especially to Peshawar and other bordering markets. Export of fresh milk and all dairy products from Afghanistan to any allowable destination is free, though some costs, apart from the transportation cost, are always involved while crossing the border. It is estimated that the total cost of Afs. 1.02/Lit. of milk is involved for delivering fresh milk to Laurga market in Pakistan. Their selling price there is Afs. 27.80/Lit. (pure undiluted with water). Thus, they are getting Afs. 26.78/Lit. of fresh milk (buffalo) by exporting to Laurga (Landi Kotal) .

Recommendation 14:

This unit price received by exporting fresh milk to towns in Pakistan should be taken as one of the reference or guiding prices while determining the procurement price of raw milk by the proposed dairy plant.

The imports are not free. But the tariff imposed by the government on dairy products is quiet low – only about 15% of the value of the import. And the valuation of the imports is done based on Government fixed 'price for export/import valuation' which is always significantly lower than the prevailing market price. The transport cost of UHT tetra packed liquid milk from nearest Pakistan border market to Jalalabad amounts Afs. 1.35/Lit. There are not any 'significant' non-tariff barriers in the export and import of dairy products from/to Afghanistan.

The import of dairy products into Jalalabad market from Pakistan is quiet organized – both in formal and informal sector. In the formal sector, there are two channels for import: a) Registered agent in Nangarhar of established dairy company; b) Importer/ trader in Nangarhar who imports through the company's agent or distributor in Pakistan. The 'informal sector' is also comprised of two different channels: a) Direct calling or self importing. They try to escape the legal requirements as much as possible to save the import cost; and b) Gandi Wala are the petty traders scattered along the border markets who brings small consignment of products very informally by not paying any tax or fees. Both of these channels of informal sector are categorized as illegal channel for importing dairy products.

Recommendation 15:

Apart from the conducive export environment created by the Government's agricultural export promotion policy, the proposed dairy plant should also consider to take advantage of the proximity to the bordering markets of Pakistan, and therefore consider to plan for export of dairy products as well.

There are many special opportunities and advantages for incorporating such export promotion plan like: easy access and low transport cost, export is free, export/import trading channels already well established, high demand for dairy products across the border, certain level of import duties and fees exist which could be made more conducive for export promotion and foreign exchange earnings.

The existence of such export potentials will need further verification. More importantly, further detail analysis of the situations to develop practical and feasible actions to take benefits from those opportunities as well as to identify the constraints is required.

Recommendation 16:

A detail study and understanding of the dairy market and marketing situations across the border towns (including of Peshawar market) by the national project staff should be undertaken before venturing into the export promotion strategy of the proposed plant.

Milk processing:

There is not a single dairy processing plant in all Nangarhar province. However, some value adding activities are carried out by the fresh milk wholesale or retail shops. There are 24 milk shops of different sizes, mostly selling fresh and cooked milk, and also making and selling products like yogurt, cream, quark and cheese. There are two tiny cheese making plant with the processing capacity of 50 Lit./day of fresh milk. Their product does not enter into Jalalabad market, nor is their purchase of fresh milk is substantial enough that may have impact on the operation of proposed plant

During winter major part (40% of total supply) of the fresh milk is utilized in cooked milk, while during summer most part (60% of total supply) is used for making yogurt. Consumption of fresh milk is not significantly different during the summer and winter as for cooked milk and yogurt – *the demand for fresh milk tend to remain stable over the seasons.*

The field survey revealed that the making and selling of yogurt is very crude and very un-hygienic. In spite of such situations, the demand for yogurt is increasing every year. The production by the traders and their sales are also increasing, and they plan to expand the business. There are few yogurt makers who are making yogurt cleanly and hygienically, but the traders/processors of yogurt and the consumers at large very clearly articulated the need for giving up the present crude method of yogurt making.

Recommendation 17:

The proposed dairy plant will help correct unhygienic production system of yogurt. And also, will easily establish itself in the market with its hygienically produced yogurt.

The milk shops on the average are paying Afs. 23.75/Lit for fresh milk to the farmer. On the other hand, the Municipal Government has fixed the price for fresh milk in Jalalabad at Afs. 21.50/ Lit. But the farmers are getting 10.46% more than that price from the wholesaler, and the consumers are paying 42.47% higher to the retailers.

Recommendation 18:

A close monitoring of such external price determination will be required while operating the proposed plant and necessary policy dialogue with the Government will also be required to maintain such price at a "conducive to all" level.

Apart from the price consideration for launching the products, it will be very crucial to consider the marketing channel of dairy products. Both the channels – supplying of milk to the plant and delivering final products to the consumers – are equally important.

Recommendation 19:

The proposed processing plant should develop and establish a network of retail outlet similar to the network of MCC. The existing Milk Shops could be utilized for this purpose as many of them have articulated their willingness to improve their shops and handle the products produced by the proposed plant.

Small holders' participation in dairy marketing system:

Inclusion of smallholder milk producers in the dairy marketing system is one of the main strategy of the Project. This market study has briefly analyzed their situations by adopting the partial SWOT (Strengths, Weakness, Opportunity and Threat) analysis process. The exercise was done by the members of the Farmers' Cooperative representing the proposed milk collection centre.

A number of indicators identified during the SWOT exercise reveal that the small farmers wanted or needed to increase the production because their 'marketable surplus' is low and the 'marketed surplus' is even lower. The average farm family size is large and a major volume of produced milk could be consumed on farm to maintain the nutrition level of family, especially of the children. Furthermore, the difficulties encountered in selling the fresh milk often entice them to domestically process the fresh milk which further reduces their 'marketed surpluses. As a result, the small farmers have identified 'absence of markets' for selling milk as their main weakness. It is hoped that with increased production and the establishment of MCC, the small farmers will be able to increase their 'marketable surplus'. And the operation of proposed dairy processing plant will further support them to increase their 'marketed surplus' as well. The farmers have also identified the need for maintaining coordination within the Cooperative members and among the Cooperatives, particularly through the 'marketing experience sharing' method to enhance their market participation.

Recommendation 20:

The smallholder milk producer should be provided with the training on handling and marketing of fresh milk and milk products.

Recommendation 21:

The MCC and the Cooperatives should be supported to organize marketing experience sharing meetings and workshop for the smallholder milk producers.

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Annex – 2-A
Number of People and Institution Interviewed for the Study, Jalalabad

People/Institution	Surveyed Number	% of total of category surveyed	% of total surveyed
1. Institutional consumer	**10**	**100.00**	**8.20**
1.1 Hotel	3	30	2.46
1.2 Restaurant	1	10	0.82
1.3 Public offices	6	60	4.92
2. Farmer	**63**	**100.00**	**51.64**
2.1 Kama District	*16*	*25.40*	*13.11*
2.1.1 Kalayakhon	3	4.76	2.46
2.1.2 Perzoye	5	7.94	4.10
2.1.3 Mostali	8	12.70	6.56
2.2 Surkhod District	*14*	*22.22*	*11.47*
2.2.1 Koshak	5	7.94	4.10
2.2.2 Fatiabad	6	9.52	4.92
2.2.3 Samsapur	3	4.76	2.46
2.3 Batikot District	*12*	*19.05*	*9.84*
2.3.1 Nawakil	2	3.17	1.64
2.3.2 Sepai	3	4.76	2.46
2.3.3 Barikhoob	3	4.76	2.46
2.3.4 Villa 20	4	6.35	3.28
2.4 Beshod District	*12*	*19.05*	*9.84*
2.4.1 Bnigar	4	6.35	3.28
2.4.2 Charmeshar	3	4.76	2.46
2.4.3 Pherawor	5	7.94	4.10
2.5 Ghanikhil District	*9*	*14.28*	*7.38*
2.5.1 Villa 25	3	4.76	2.46
2.5.2 Villa 26	4	6.35	3.28
2.5.3 Bacher 26	2	3.17	1.64
3 Wholesaler/Importer	**14**	**100.00**	**11.47**
4 Processor	**5**	**100.00**	**4.10**
5 Individual consumer	**30**	**100.00**	**24.59**

Annex – 2.B
Partial List of People and Organization Consulted During the Study

Mr. Hejrat, Director of Administration, Nangarhar province (representative of Nangarhar Governor).
Mr. Mohmood, Director Nangarhar University Dormitory.
Mr. Sultani, Assistant Director of Nangarhar Custom Office.
Mr. Syed Husain, President, Gujar Dairy Farmers Association.
Chamber of Commerce of Nangarhar Province.
Welfare and Work Directorate Nangarhar Province.
Qumandant of Qule Urdo of Nangarhar (Military regiment)
Public Health Office Nangarhar Province
Police Office Nangarhar Police

Interviewed farmers in Behsood, Kama, Surkhrood, Ghanikheel, Berikot districts.
Survey Faith Abad (Surkhrood district) Mini Cheese making plant.
Survey many wholesaler and importers in the Jalalabad city
Survey and interview milk processing shops in Jalalabad city
Survey and interview dairy consumer in different part of the city
Survey and interview many hotel, restaurant, party hall like Kabul Hotel, Spinghar Hotel.

Annex – 3.1.A
Consumers Buying Local and Imported Dairy Product
Jalalabad Market, Afghanistan

Product	Quantity Bought Lit./Kg/Day		% of Consumer	
	Local	Imported	Local	Imported
Fresh/Liquid milk	1.82	1.11	60.87	39.13
Milk Powder	NA	1	NA	100.00
Yogurt	1.71	NA	100.00	NR
Cream	NR	0.25	NR	100.00
Butter	0.34	NR	100.00	NR

Annex – 3.2 A
Wholesaler/Importer's Perception on Imported and Local Dairy Product
Jalalabad Market, Afghanistan

	Local product	Because	Imported product	Because	Remark
Consumer prefers	15.38 %	1,Own product 2.Some products are unavailable	84.62 %	1.Good quality 2.Hygenic 3.Easy to carry 4.Low quality of local product	
	Yes		**No**		**Condition for Yes**
Will sell Nangarhar product	92 %		8 %		1.Low priced 2.Nice packing 3.High quality 4.Get agency
Room for new dairy product	73 %	1.All product 2.Yogurt 3.Milk with fruit	27 %	1. Everything is available. 2.Easy supply	

		4.Fresh milk 5.Chkka		from Pakistan	
Join Nangarhar dairy market	100 %	1.Own product			1.Low price 2.Nice packing
Transit problem while importing milk	30 %	1.Process in Torkham border custom 2.Ask high charge	70 %	1.Delivered at shop 2.People bring illegally as well	

Annex – 4.1.A
Present Production of Fresh Milk in Project District
Nangarhar Province, Afghanistan

District	Cooperative	Number of Cows	Breed % of cows		Production Lit./day		Average Total milk Lit./day
			Local	Cross	Summer	Winter	
Surkhrood	Koshkak	80	40	60	500	350	425
	Shamsepoor	50	10	90	250	200	225
	Fatiabad	300	40	60	500	400	450
Behsood	Peraver	130	25	75	400	350	375
	Charmsera	90	30	70	300	250	275
	Benega	100	50	50	500	400	450
Kama	Nariviala	150	30	70	500	400	450
	Qallaiakhon	200	30	70	550	450	500
	Perzai	120	50	50	500	450	475
Batekot	Barekab	80	40	60	300	250	275
	Sepay	200	25	75	450	300	375
	Shalmavialla	55	20	80	100	100	100
Ghanikhel	Besteshash	80	10	90	300	200	250
	Bestepang	70	10	90	300	250	275
	Bachai	60	20	80	150	100	125
Total		***1765***	***28.67***	***71.33***	***5600***	***4450***	***5025***
Average Yield/Cow					***3.17***	***2.52***	***2.85***

Annex – 4.1.B
Indicators for Estimation of Production and Marketable Surplus of Fresh Milk
Nangarhar Province, Afghanistan

	# of cow/ HH	Yield lit/day		Production lit/day/HH		Marketable surplus % of total production	Farmer having *marketed surplus* %	*Marketable surplus*/lit/day/HH		*Marketable surplus*/lit/day/cow	
		Sum	Wint	Sum	Wint			Sum	Wint	Sum	Wint
Average All	2.55	8.52	6.00	21.73	15.30	54.93	66.20	11.94 *(8.90)*	8.40 *(6.43)*	4.68 *(3.17)*	3.29 *(2.52)*
Local breed	2.40	6.52	4.18	15.65	10.03	27.13	40.00	4.25	2.72	1.77	1.13
Cross breed	2.70	9.82	7.05	26.51	19.04	51.88	76.00	13.75	9.88	5.09	3.66
Exotic breed	2.46	9.08	6.85	22.34	16.85	74.48	92.31	16.64	12.55	6.76	5.10
Beginning of lactation		9.45									
Middle of lactation		7.85									
End of lactation		5.3									
	Number of month/year getting milk										
Average month	10.06 Month										
12 month/yr	28.57 % of HH										
< 12 month/yr	71.43 % of HH										
Minimum month	7 Month										

Notes: HH = Household; Lit = Liter; Sum = summer; Wint = Winter
Figures in italic parenthesis are separate estimate of Project staff.

Annex - 5. A
Total Foreign Trade of Afghanistan with Neighboring Three Countries[1]
and Total Imports of Powder Milk

Countries/Year	2009-10	2008-09	2007-08	Remarks
3 countries' share in total exports %	76.48	76.70	86.12	
3 countries share in total imports %	17.72	26.32	22.10	

Share of Pakistan alone in total exports %	47.39	48.44	66.30	
Share of Pakistan alone in total imports %	9.23	16.19	9.96	
Total import of milk powder (Ton)	4,178	10,767	7,603	
Total import of milk powder (000' US$)	7,665 (1.83 US$/Kg.)	15,594 (1.4 US$/Kg.)	8,803 (1.16 US$/Kg.)	

1. *Pakistan, India and Iran. Uzbekistan, China PR and Japan are other three countries coming up as major import sources for Afghanistan in recent years.*

Source: Statistical Year Book 2009-10, Central Statistics Office, Kabul, Afghanistan. www.cso.gov.afg

Annex – 5 . B
Import and Export of Dairy Products to/from Afghanistan to Different Countries

		Imported value in '000 US$		% share of country/product code of two years	Exported value in '000 US$		% share of country in two years
HS Code	**Product label/country**	**2008**	**2009**		**2008**	**2009**	
0402	**Milk and cream, concentrated or sweetened**	**15,594**	**7,665**				
	Pakistan	6,865	3,026	42.53			
	Netherlands	371	1,115	6.39			
	India	601	596	5.15			
	United States of America	2,098	541	11.35			
	Ireland	445	539	4.23			
	Iran (Islamic Republic of)	265	347	2.63			
	Russian Federation	61	290	1.51			
	France	63	212	1.18			
	Belgium	633	210	3.62			
	United Arab Emirates	785	208	4.27			
	Tajikistan	3	131	0.58			
	Uzbekistan	0	124	0.53			
	Poland	307	87	1.69			
	Malaysia	57	72	0.55			
	Singapore	147	60	0.89			
	Kazakhstan	0	59	0.25			
	China	600	40	2.75			
	Indonesia	0	7	0.03			
	Viet Nam	32	0	0.14			
	Turkmenistan	16	0	0.07			

	Australia	68	0	0.29			
	Brazil	32	0	0.14			
	Canada	1,440	0	6.19			
	Germany	25	0	0.11			
	Hong Kong, China	29	0	0.12			
	Japan	156	0	0.67			
	New Zealand	61	0	0.26			
	Saudi Arabia	19	0	0.08			
	Thailand	225	0	0.97			
	Turkey	167	0	0.72			
	United Kingdom	24	0	0.10			
0403	**Buttermilk and yogurt**	**154**	**62**		**177**	**157**	**100.00**
	Pakistan	37	38	34.72	0	11	3.29
	Iraq				176	137	94.01
	Canada				0	5	1.50
	Germany				0	4	1.20
	Uzbekistan	91	24	53.24			
	Iran (Islamic Republic of)	26	0	12.04			
0406	**Cheese and curd**	**12**	**37**				
	Pakistan	0	37	75.51			
	United Arab Emirates	12	0	24.49			

Source: ITC calculations based on COMTRADE statistics, www.trademap.org

Figure – 6.6.A

Marketing Channel of Diary Products Jalalabad Market, Afghanistan