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DAIRY SECTOR ACTION PLAN

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SECTION I: EXECUTIVE SUMMARY

A. Dairy Sector Overview

The dairy market in Azerbaijan accounts for approximately US\$ 2 billion in sales.¹ Seventy percent of milk product in the country is sold un-pasteurized in green markets or door to door. Approximately 30% of milk product, half of which is imported, is sold through commercial channels. According to the Government of Azerbaijan (GOAJ), 80% of dairy production operations have 5 or fewer cows. Processing operations (two large and several small processors) face shortages in raw milk collection and utilize a disjointed network of collection facilities. Producers are inhibited in their ability to satisfy the raw milk deficit created by poor dairy cattle nutrition.

In international comparison, the Azerbaijan dairy sector does not fare well. Milk yield is approximately 1,100 liters per cow, per year. It is nearly 600% greater in the EU, with yields of approximately 6,000 liters per cow, per year. While milk yield per non-irrigated hectare is approximately four to five tons per year in Azerbaijan, it is more than double this in the U.S., with averages of 10 to 12 tons per hectare. Thus, while constraints throughout the entire dairy value chain impact commercial production cumulatively, the production function is the weakest link in the chain.

Of the various production components that go into dairy production, cattle nutrition is the single greatest bottleneck to increasing the quantity and quality of raw milk. A lack of irrigation and overgrazing for pasture lands exacerbates this bottleneck and causes greater expense for transport. The large number of small and geographically scattered dairy farms makes the assembly cost of milk more expensive and at the same time makes it more difficult to maintain quality resulting in the generally poor quality of raw milk delivered to dairy processors. This quality issue prohibits the production of some value added dairy products and limits the shelf life of basic dairy products. Poor on-the-farm hygiene and gaps in the cold chain contribute to this quality problem and the resulting expense. The general low human resource levels including a lack of educational and consulting services at all stages of the value chain are also pervasive and pernicious constraints throughout the value chain. Although donor programs have made contributions in this area, human resources in the dairy sector are particularly low and there is a limited base of associative structures or cooperation among stakeholders. These factors combine to create a diminished ability across the sector to adopt best practices resulting in decreased product quantity and quality and concomitant decreases in sales, jobs, and investment.

In sum, the constraints facing the sector are so significant, complex, and interrelated as to necessitate a regional, rather than national engagement in the dairy sector. Though interventions such as upgrading regional irrigation systems; the introduction of improved stock; and combating serious animal diseases and health are not constraints that can be alleviated by PSCEP given

¹ The Azerbaijan State Statistical committee estimates annual dairy consumption per person at 179Kg in 2007. [179Kg X 8 million people]/1.4 AZN per liter = 2.1 Billion AZN

present project resources, transformative regional impact is conceivable given a targeted implementation strategy.

B. Action Plan

The serious nature of these obstacles implies that a program such as PSCEP must be strategic in its selection of project interventions, if it is to have a meaningful impact and not get swept away by the constraints facing dairy in Azerbaijan. The original Action Plan drafted by a PSCEP consultant envisioned a substantive set of actions aimed at addressing many of these constraints. It became clear, however, the resources required to implement the program could not be fully addressed within PSCEP's resources and life of project time frame. In PSCEP's review of the Action Plan, we began a dialogue with dairy sector stakeholders and donors to determine the most effective strategy to make a meaningful, sustainable intervention in the sector that would not run head on into the types of constraints that we could not possibly address, e.g., the dearth and state of irrigation systems.

The results of these dialogue and analysis is to develop a strategy aimed at developing a more "implementable" regional strategy, focused in one geographic area, south-eastern Azerbaijan, working directly with a few select large processors, Pal Sud and Belesuvar Agro. Based on further discussions with USAID, PSCEP will also monitor and provide guidance to UMID, an Azerbaijani NGO which has been awarded a \$500,000 grant to work with dairy producers in the northwest regions of the country. PSCEP will strive to create effective synergies between the two programs.

We deem the regional focus and partnership with two anchor firms essential for two reasons. First, constraints in feed, fodder, and irrigation are made more surmountable by narrowing the focus of dairy sector engagement to the south. The area has higher rainfall and thus lessens the need for addressing irrigation issues.² Second, the critical constraint in the dairy sector is production based, and in order to seriously address it in an environment in which typical dairy farms possess 5 or fewer cows, it is important to select a region where anchor processing operations such as and Belisuvar Agro can play the role of value chain champion. These processors in time will serve as models for the private sector while simultaneously creating a foundation and the economic platform to push sectoral constraints to the forefront of the national agricultural agenda. Moreover, by working with these anchor firms, PSCEP will harness the natural associative structure of large processing company collection centers in order to provide technical assistance, disseminating best practices, and tracking our progress quantitatively. Given that 70% of milk products are sold non-pasteurized, door to door, promoting commercial milk processing in this way also possesses the added benefit of encouraging a sectoral shift towards the consumption of more healthy milk products.

² This raises the question of how replicable will be efforts elsewhere. Our response is three fold: (1) programs aimed at enhancing the dairy industry (and not, poverty alleviation which has a different set of objectives) do need to be focused on areas of greatest potential. There are other areas of the country such as Zakatala where irrigation is also not as critical. (2) as efforts with the USAID dairy grants program and the Azerbaijan Investment Company unfold, the impact of our activities in the south will expand into the Central region and beyond. (3) As the GOAJ addresses irrigation constraints, more areas in the country will become suitable for the type of interventions to be implemented by PSCEP.

The essential activities that comprise the action plan described in this document are as follows.

1. Engage anchor processors and Belesuvar Agro as client firms to address key constraints to increasing sales, investment, employment generation and production enhancement. Specifically, PSCEP will work with these firms on (1) increased milk production through targeted interventions in nutrition and (2) milk collection practices including quality control.
2. Collaborate with local community development organization, UMID, to disseminate and drive the adoption of best practices in dairy nutrition, milk quality, and other technical assistance as required by given market demand to additional producers and bring additional technical assistance resources to bare within the communities where lead processor collection centers are located.
3. Enhance access to finance and investment throughout the value chain including commercial bank lending, equity investments, joint ventures and/or GDA promotion to address specific areas such as transportation, milk collection, and feed.
4. Apply lessons learned from PSCEP dairy activities in the Southern region to multiple opportunities with the Azerbaijan Investment Company (AIC) which is investigating several large, green field investments in dairy in other areas of Azerbaijan, further expanding the geographic reach of PSCEP activities.
5. Promote the organic development of associative dairy producer relationships. PSCEP will promote associative structures among farmers collection agents, and collection centers, including a dairy association in the southern region of Azerbaijan.

To implement this course of action, PSCEP will work in partnership with Lankaran-based BDS, LBC/AAC; Jalilabad based BDS, JABC; our local dairy specialist; and specialized technical assistance in dairy and finance.

Expected impact of these interventions include:

1. 3 million AZN sales increase per year, based on an expected 20% increase in milk production efficiency (quantity and quality) and a 50% increase in processor sales over the life of the project.³
2. Leveraged finance and investment of approximately US\$15-20 million in the dairy sector.⁴
3. An associative relationship of dairy producers.

³ Assumes 20% increase on current average daily production in targeted area of 20 tons/day and a wholesale price of 1 AZN per liter, a 300,000AZN sales increase relating to quality improvement, and a 700,000 AZN sales increase related to Agro.

⁴ This includes dairy investments in the region and through the AIC and other equity funds, with PSCEP assistance.

SECTION II: DAIRY SECTOR DESCRIPTION AND BACKGROUND

A. Dairy Value Chain

The dairy industry in Azerbaijan is composed of very small producers with a few exceptions. There are four large processors and many small processors, with both groups delivering their own products to retail outlets. There are a limited number of vertically integrated dairy operations. These are generally former state/collective farms restructured into privately held companies in which significant equity investments have been made.

The domestic dairy is over 2 billion AZN annually with imports of roughly 15% or 300 million AZN. The vast majority of dairy products consumed countrywide are purchased via door-to-door sales or through unregulated open markets (sometimes referred to as “green markets”). Some estimates put this amount at 90% of domestic production, although 70% is the more reasonable figure cited.⁵ In the larger urban areas, a smaller percentage of the domestically produced products go through open markets with more being sold in retail shops and supermarkets. Currently most of the dairy products processed in commercial channels (i.e. through established dairy processing plants) are sold and distributed directly by the dairy processor to domestic retailers.

The distribution system is generally direct to retail outlets by the dairy processors themselves or distribution of on-farm production door to door and through open markets. There are a multitude of small food retail shops with a limited number of supermarkets in larger cities serving dairy product consumers. As noted earlier a significant amount of dairy products continue to be purchased in open markets.

The dairy sub-sector is the main supplier of beef to the domestic market in the form of young bulls and cull cows. Small farmers generally sell them in local cattle markets where local butcheries buy them, slaughter and process them as fresh meat or as further processed sausages. Buyers and traders may go to larger farms to select and buy cattle. Virtually all high value meat used in hotels and upscale restaurants is imported.⁶

Past efforts through USAID in the dairy sector have involved work with veterinary services, artificial insemination, and association development from Zakatala to Lankaran. The focus has primarily been on smaller farms. However one partnership that bridges the gap between subsistence and commercial operations which was taken into consideration in fashioning this action plan involved joint efforts between , CHF, and the municipality of Chakhyrly (near Masalli) that culminated in a functioning and successful collection center in June of 2008.

⁵ Food Navigator.com report “Bank funds Azerbaijan dairy industry” November 24, 2004. Comment by EBRD spokesperson Vanora Bennett.

⁶ For more description of the dairy value chain please see Annex B “Value Chain Description and Mapping”

B. Dairy Sector Metrics

A 2006 ACDI/VOCA report on beef and dairy in Azerbaijan indicates that nearly 70% of the raw milk consumed is non-pasteurized milk with the remaining 30% pasteurized and processed. It also reports that local production satisfies only 45% of the national demand for dairy products⁷. This number is inconsistent with amounts of per capita consumption of dairy products and importation of dairy products as reported by the State Statistical Committee however it is a general industry consensus that large amounts of unreported milk powder are imported and used in processing dairy, bakery and confectionary products.

There are over 1.2 million dairy cows with total annual milk production reported at just over 1.3 billion liters annually⁸. One estimate is that only 5% of the dairy farms have 20 cows or more and that 75% have fewer than 5 cows⁹.

There is likely under-reporting of UHT milk, butter, cheese and fruit yogurt imports as well. Based on the Statistical Committee dairy product per capita consumption, import and production numbers it appears that almost half of the dairy product sold in commercial retail outlets (supermarkets and small food stores) is imported product. Thus, if 70% of domestic dairy product consumption is purchased in the open market, of the 30% going through “commercial channels” about half, or 15% of total dairy product consumption is of imported dairy products. It appears that the majority of the dry milk powder is being used in the confectionary and bakery industries.

Based on observation and State Statistical Committee figures, the annual milk yield per cow is extremely low, at about 1,100 liters/cow. This compares to an average annual production of over 6,000 liters/cow in the EU. Thus while the entire dairy value chain is weak, the production function is the weakest segment in the chain. The large number of small and geographically scattered dairy farms makes the assembly cost of milk expensive and at the same time makes it difficult to maintain quality.

There are a number of common benchmarks used in the dairy industry¹⁰. Because real cost figures and other efficiency measures are simply not monitored or in some cases not shared if they are monitored, this list is unduly short and basic, but telling:

Benchmark Description	Azerbaijan	Industry Standard
Milk Yield Per Cow	1,100 liters/cow/year	EU Avg. over 6,000 liters/cow/year
Lucerne Yield per HA (non-irrigated)	4 to 5 ton/ha.	US Avg. 10 to 12 ton/ha.
Dairy Plant Utilization (% of Capacity)	1 plant at 16 % another at 30%	Common to be at 90 to 100 %
Milk Cost as % of Processor Product Cost	Estimated 35 %	US common to be 75 to 90 %

In the U.S. the cost of milk in dairy products is significant, as shown above. The 10-25% balance of product cost is manufacturing cost. In the U.S., labor and energy are the two biggest

⁷ ACDI/VOCA Azerbaijan Beef and Dairy Value Chains report July, 2006 page 2

⁸ The Agriculture of Azerbaijan, 2008 , State Statistical Committee, page 99

⁹ Food Navigator.com report “Bank funds Azerbaijan dairy industry” November 24, 2004.

¹⁰ Industry standard measures may be found here: <http://ohioline.osu.edu/b864/pdf/864.pdf>

components of manufacturing cost. The price paid for milk to farmers by the larger dairy processors in Azerbaijan is about 0.35 AZN per liter which is quite comparable to Germany and Kosovo, and higher than some countries in the region. However, final product price is higher on average than developed markets and some transition countries. For example one liter of UHT milk in the Balkan countries is retail priced at around 0.80 to 0.90 Euro per liter while in Baku it is selling for 1.20 to 1.50 AZN per liter. This would seem to indicate that manufacturing, distribution and retailing costs are higher in Azerbaijan or profits are greater. In reality it is probably a combination of both costs and profit margins.

A rough estimate of the cost breakdown of the FOB price for dairy products based on the limited information available is production 25%, processing 45%, and distribution 30%.

C. Dairy Value Chain Constraints

As the dairy production metrics make clear, the quality and quantity of dairy production is poor in Azerbaijan. Likewise, the value chain is inefficient and characterized by high prices. Providing adequate amounts of quality nutrition for dairy cows is hindered by a lack of knowledge, poor irrigation, poor quality concentrate and other input supplies, crop varieties, and modern pasture management practices. While poor feed and feeding practices are the primary reasons for low milk production per cow, the lack of improved dairy genetics in most herds is also a limiting factor to efficient milk and meat production. While producers are largely small scale in their nature, the large shortfalls in the availability of credit hobble the pace at which they can increase their scale and become large producers or processors in their own right.

From shortcomings in production comes the generally poor quality of raw milk delivered to dairy processors. This quality issue prohibits the production of some value added dairy products and limits the shelf life of basic dairy products which increases transport costs for processors. Poor hygiene on the farm and gaps in the cold chain contribute to this quality problem. The general low human resource levels including a lack of educational and consulting services at all stages of the value chain are also pervasive and pernicious constraints throughout the value chain.

In sum, the limiting constraints affecting the sector are great and they require significant investments by both the GOAJ and the private sector. A national wide enhancement of the sector would require addressing many of these constraints simultaneously. For a regional activity however, the key is identifying specific segments and opportunities to support a process of sector competitiveness over the longer run.

C1. Production

Livestock nutrition is a significant problem. Dairy cows are in poor body condition, in large part because of poor nutrition. They provide less milk for a shorter period of time because what sustenance they receive their body allocates to survival before milk production. Were a different breed of cows imported or brought in through artificial insemination, this nutritional shortage would only be exacerbated given present nutritional norms. The constraints to improvement with regards to nutrition are also significant. They include a lack of knowledge, a lack of productive soil, irrigation water, forage varieties, pasture management, equipment, barns, crop storage facilities and financing.

Poor quality forage and low crop yields are major reasons for poor dairy cattle nutrition. Pastures are chronically overgrazed and Lucerne and native grass meadows are poorly managed. Some of this is due to a lack of knowledge and some to a lack of equipment. Maize is not widely grown and forage silage of any sort is not harvested. Maize silage, grain and Lucerne are staples of an efficient dairy industry where ever they can be successfully grown. It appears they can be grown in Azerbaijan with adequate irrigation, fertilization and improved varieties.

Poor raw milk quality is evident throughout collection networks as measured by the microbiological components of bacteria and somatic cells. If raw milk quality was higher dairy processors would have more options for producing high value dairy products with longer shelf lives. Chemical component measurement of fat and protein content reveals raw milk at collection centers to be lower in fat than normal, suggestion milk tampering prior to the collection facility.

General lack of knowledge, a lack of institutions with an understanding of current state-of-the-industry practices, and no means to disseminate such informatino to the scattered base of farmer clients does not bode well for any near term rapid impact of new dairy and feed crop production technology.

Lack of secure milk markets is a limitation to the development of dairy producers. Without the development of milk collection centers to encourage dairy processors to buy milk in more remote areas and/or areas distant from their processing plant locations rural populations will continue to remain apart from the commercial dairy sector.

Lack of equipment dealers is a general issue affecting production and to some extent processing. At the production function level it is especially true of dairy equipment dealers but includes a lack of specialized forage harvesting equipment such as forage choppers and large round balers at field machinery dealers.

C2. Milk Assembly

Small, scattered farms, poor rural road network, and a lack of milk collection centers all contribute to high milk assembly costs. Adulterated, culled, or unhygienic raw material also makes milk assembly less efficient. Over the next 5 to 10 years collection centers will serve a critical function by providing a market for small dairy farms, some of which may develop into commercial farms over time.

C3. Processing

Low plant utilization contributes to high per unit manufacturing costs as well as higher per unit labor costs. It appears that generally the low utilization is more a function of a lack of milk supply than a lack of demand for finished product. None of 5 processing plants interviewed as part of this Action Plan were operating at more than 30% utilization of stated capacity. It is impossible to be competitive in the long term with these levels of plant utilization.

PSCEP visited four small dairy processing plants, both part of vertically integrated dairy operations, to examine processing line efficiency and product safety¹¹. Both were operating in very poor conditions with old, Russian made equipment, inadequate building conditions and a general lack of GMP (Good Manufacturing Practices). Processing operations in one of the commercial dairy processing plants visited was a new plant located in Lankaran with ISO22000 certification including a HACCP (Hazardous Analysis and Critical Control Points) program. Thus GMP which is a pre-requisite program to HACCP was assumed to be in effect at the facility. These types of certifications or compliance therewith are very limited and this example still illustrates the exception and not the rule regarding the commonly implemented standards in Azerbaijan. Based on discussions with plant management staff at the other two commercial dairy processing plants it was apparent that plant facilities and equipment were not up to international standards.

The low level of processing company standards compliance is also affected by the inadequate or nonexistent support services negatively impact competitiveness as in many cases the dairy processor has to have a specialist on staff to meet an intermittent need who is not fully employed at other times. Examples of limited or nonexistent support services are standards trainers and certifiers, certified stainless steel welders, pest control services, scale & measurement instrument calibration, specialized equipment maintenance and repair, and IT services.

C4. Distribution

High distribution costs are a result of poor roads, many small food shops, short shelf life products and gaps in the cold chain. The short shelf life of many of the cultured products (yogurt, sour cream, etc.) make it necessary for the dairy processor or other distributor to make more frequent smaller deliveries to keep the products fresh. The many small food shops result in many delivery drops of relatively small amounts at each stop. As noted previously this cost could be as high as 30% of the FOB price for dairy products processed and sold through commercial channels.

It seems reasonable that longer term dairy processors will combine distribution to the many small food shops with other processors of refrigerated food products through a common wholesale distributor to reduce these costs.

The 30% cost referred to above does not include dairy products produced on the farm or in the home being sold in the green markets. These products are locally produced and sold in very local markets. Thus the actual transportation cost is quite low. If a meaningful monetary value is placed on the time of the person(s) involved in the delivery and sale of the product it would likely approach 30% of the product's final sale price. A monetary value for a person's time spent in processing, distributing and selling these locally produced dairy products is rarely accounted for. This lack of recognized cost for labor and time results in a lower sale price of non-commercial operations than the price for similar products produced and sold through commercial dairy channels.

¹¹ For more information on visits conducted during the creation of this action plan please see Annex E "List of Visits and Contacts".

C5. Marketing

There are a limited number of agencies and few, if any, with professional experience in marketing dairy products. Dairy processors do not understand the true meaning of marketing and in most cases they are engaging in a sales and distribution function based on price and contacts. There appears to be willingness on the part of food supermarkets to allow and even encourage in-store promotions and POS materials. There are no current dairy market studies available to help determine dairy product consumption by product category or other consumer preferences.

C6. Retail Sales

High retail sales costs again are a result of many small food shops and the cost of maintaining a large sales force to service these shops. One large dairy processor stated that out of their total of 160 employees, 55 were sales people and that only gave them sales coverage of the Eastern part of Azerbaijan. While this can be considered a wholesale sales cost, it exemplifies the high costs of servicing many small retail food shops and the premium that has to be paid for the convenience of the small food shop in many micro communities. The low percentage of automobile ownership especially among the elderly in both large cities and villages indicates these convenience food shops will not disappear any time soon. For example, ADA Group has a large retail food chain of 44 stores of varying size. Ramstore from Turkey and City Market are also present in the Baku market with supermarket retail stores. However the majority of retail food distribution is still being done through small family owned stores.

C7. Access to Finance

Banks are reluctant to lend to small farmers. There is a prevailing opinion that agriculture in general is too risky. Dairy farmers and dairy processors alike feel that interest rates of 20% plus are too high. Even though the real interest rate may be much less because of inflation rate. Because of competition, dairy processors feel they cannot pass along price increases at the same rate as general inflation.

The State run Agro Leasing company does some agriculture facility leasing to provide agriculture supply outlets in some areas of Azerbaijan. One international financial organization observed that many of the smaller, private leasing companies are finding it hard to compete with Agro Leasing, suggesting that the program which has been designed to help rural agribusiness, may be having negative impacts to the value chain of crowding out private lending.

C8. Support Institutions

Value chain support services are lacking or very basic at best. Primary irrigation water is not readily available in all dairy production areas. Veterinarian services are provided primarily through state veterinarian stations. There are approximately 3,700 state employed veterinarians including those involved in border control and about 200 private veterinarians. The state veterinarians are Soviet era trained and an aging population while newly trained veterinarians are receiving only 4 years of training at the Ganja Agriculture Academy which is very poorly equipped to properly train them.

There are a limited number of crop input suppliers and even fewer farm equipment dealers. This is especially true of dairy equipment dealers. The crop input dealers that do exist have a limited assortment of inputs and generally not products that incorporate the latest technology.

There is no functioning extension service and limited consulting services being provided by several BDS businesses operating throughout Azerbaijan. These BDS providers were established by NGOs and continue to obtain most of their revenue from various international donors.

D. Dairy Value Chain Opportunities

While nearly all segments of the value chain merit assistance, improvements in the on the production function are likely to yield the greatest return, as this is the weakest link in the chain. Areas for improvement include:

1. Improving dairy cattle nutrition
2. Improving raw milk quality
3. Increasing access to finance and investment
4. Association development

There is a significant opportunity to replace some dairy imports in the domestic market and perhaps a limited opportunity to export selected dairy products to Georgia. The quality of the local products must increase in order to capitalize on this opportunity. Furthermore dairy sector competitiveness will require a focus on commercializing the industry. On the other hand, the needs of the sector are so vast that any assistance program needs to be highly focused.

D1. Dairy Cattle Nutrition

- Focus on improving dairy cattle feed and concentrates and their availability.
- Identify feed concentrate ingredient manufacturers, importers, and traders.
- Bring in STTA to work with the selected feed concentrate manufacturers on breed-standard based feed formulations and plant operations to improved efficiency.
- Cooperate with BDS providers to conduct targeted, demand-driven trainings in key dairy production areas to raise the awareness of the importance of good dairy cattle nutrition and providing better quality feed.
- Encourage feed testing systems to deliver optimized feeding and cattle nutrition.
- Identify and cooperate with active BDS providers and educational institutions inclusive of internship programs for processing, production, and vet services.

D2. Improve Raw Milk and Final Dairy Product Quality

- Support training on good milking and milk handling practices, especially focused on hygiene and milk preservation
- Management and general training for dairy plant workers. Focus on general management, GMP and TQM.

D3. Access to Finance

There are numerous opportunities to expand access to finance in the dairy sector. Equipment financing through a third party loan or lease program is one possibility. Another option is grouping key dairy farmers together to ask for crop input financing, with delayed payment until harvest time. This works best for crop farmers but has some application where dairy farmers grow some crops for sale such as wheat. Creditors generally are more interested in meeting with a group of farmers to explain their lending programs to reduce loan initiation costs and improve their chances of getting quality loans from a group of leader farmers.

Possible Finance and Investment Opportunities
1. Joint venture/GDA with Belesuvar Agro for enhanced processing operations
2. Third Party Loan/Lease programs
3. Delayed Payment, crop input financing at the group producer level
4. Operational leases for processing and transportation equipment
5. Inventory collateralized operational loans for hard cheeses requiring extended ripening periods
6. Supply side financing for feed concentrate or feed components
7. Investments in existing plants or Greenfield investments by the AIC, CIIC, KAIC, and other equity investors.

D4. Support Development of Dairy Value Chain Associations and Institutions

Support official registration of dairy industry associations. This includes identifying issues and formulating resolutions and then encouraging implementation of the resolutions. Milk collection centers can act as a natural gathering point for producers where training can be provided and allow associations to form organically. Given the difficulties of past programs to advance association registration requests over the last eight years it is critical that attempts to do so only be conducted with groups that are highly motivated and in possession of an economy of scale that would allow them to do so.

SECTION III: ACTION PLAN

A. Objective

PSCEP will focus on high return, achievable goals, within the allotted project timeframe. Listed below in priority order are those actions which have the greatest possibility of success, with the greatest returns. Estimates of their impact in the form of sales, jobs, and investment have been included where applicable.

B. Actions

PSCEP's strategy in the dairy sector is to focus on a geographic area around Lankaran and work with targeted anchor processing firms Pal Sud and Belisuvar Agro on niche interventions that will improve milk production quantity and quality. This will be done by broadly focusing on the largest competitiveness constraints - cow nutrition, milk quality, access to finance, and association development. USAID's forthcoming grants program will undergird and support these efforts in the southern region. Pending the finalization of a forthcoming grant program funded by USAID to promote the dairy sector in the southern region of Azerbaijan, an additional Annex will be added to this document to detail coordination and collaboration between programs. The exception to this focus will be assistance to the AIC and other investment funds for potential dairy investments in other regions. As noted above, PSCEP will also coordinate with and provide guidance to the USAID grant to UMID working in the northwest regions, promoting synergies between the two programs.

Focusing engagement in southern Azerbaijan and to base that engagement on key partnerships with anchor firms Pal Sud and Belesuvar Agro will permit PSCEP to have transformational impact both at the producer level and the processing level. The strategy is based on two fundamental tenets.

First, constraints in feed, fodder, and irrigation will be more surmountable by narrowing the focus of dairy sector engagement to the southern region, where naturally higher rainfall increases fodder and lessens the need for irrigation. Second, the critical constraint in the dairy sector is related to production. In order to seriously address them, in an environment in which typical dairy farms possess 5 or fewer cows, it is important to select a region where there are large dairy processing operations through which we can aggregate producers to achieve greatest impact. By working with large producers PSCEP will harness the natural associative structure of large processing company's collection centers in order to provide technical assistance, disseminating best practices, and tracking our progress quantitatively. Given that 70% of milk products are sold non-pasteurized, door to door, promoting commercial milk processing in this way also possess the added benefit of encouraging a sectoral shift towards the consumption of more healthy milk products. A concern that may arise is whether efforts in the south, with the characteristics discussed above, may be fully replicable elsewhere. We recognize that they may not be. On the other hand, these are the conditions that are required for a successful dairy

industry (anchor firms, basic access to water, etc.). The GOAJ can catalyze their replication elsewhere through investments in infrastructure, e.g., irrigation systems.

To implement this course of action, PSCEP will work in partnership with Lankaran-based BDS, LBC/AAC; Jalilabad based BDS, JABC; our local dairy specialist; specialized technical assistance in dairy and finance; and the upcoming USAID dairy grants program. This latter partnership with the USAID dairy grants program will involve collaboration on technical assistance and association development that will broaden the reach of PSCEP activities into the Central Area of Azerbaijan.

B1. Cattle Nutrition

Cattle nutrition is the number one priority for the dairy value chain. It will yield the greatest return on the PSCEP investment if focused and measured on lead farmers in key regions¹². PSCEP will focus on improving dairy cattle feed and concentrates and their availability. This will involve providing assistance to several viable feed concentrate manufacturers identified to date. PSCEP will provide technical assistance to these manufacturers in order to optimize feed nutritional value and cost effectiveness by identifying low cost inputs and rationalizing production processes.

Additionally, BDS providers such as the Lankaran Business Center and Azerbaijan Agribusiness Center (LBC/AAC) headed by dairy expert Dr. Mobil Penjaliyev will engage producers in capacity building exercises focused on milking hygiene, milk preservation, and breed standard-based nutrition regimens as identified and demanded by processing anchor firms Pal Sud and Belesuvar Agro¹³.

Because commercial grade feed mills are sorely lacking in this region the project will seek out geographically relevant commercial by-products that may make appropriate and cost-effective feed components¹⁴. For example in the south we will begin by exploring prices for feed components from Shah Abbas, Jalilabad Flour Mill, Turk Gardashlar, and Nur Masalli Flour mill. Components from the flour making process often make an economical cattle feed component and may be a cost-effective means of boosting cattle nutrition in the south. These actions will allow for unit feed price reductions and encouraging milk producers to take advantage of this cost effective resource. Better fed and managed cows will produce more milk and transform not only the sales of the regional dairy sector but also the structure of the sector which is reluctant to move towards commercially processed milk`.

Through our partnership with and Belesuvar Agro and their respective collection centers, PSCEP's local dairy specialist will provide targeted technical assistance in cattle nutrition to lead dairy producers that are aggregated by their affiliation with the collection centers. PSCEP

¹² For more information on lead producers in the Southern region please see Annex E, "Lead Producers" and the map of perceived dairy production for the region in Annex D, "Milk Production Concentration Map".

¹³ For more information about specific lead dairy producers please see Annex F for a list of key dairy producers presently being engaged in the region on behalf of .

¹⁴ Commercial Feed mills in Azerbaijan include: Golden Feed, Balakan Feed, Sheki Feed Mill, Saatli Feed Mill, Alibayramli Feed Mill, None of which have operations in the south. Ali Baiyramli and Saatli are the closest.

identified feed manufactures in May prior to the beginning of general training in cattle nutrition. More advanced technical assistance is being delivered in August with the aid of foreign technical experts working collaboratively with the chief production technician of Belesuvar Agro has demonstrated interest in parallel activities and pending consultation from our foreign technical consultant in August we will proceed along a parallel track with their collection centers as well.

PSCEP estimates a 2 million AZN sales increase per year on an expected 20% boost of milk production throughout the engaged collection centers . This estimate is conservative given the expansive collection network of Belesuvar Agro as well. In partnership with 's chief dairy technologist BDS provider LBC, has estimated 4,000,000 AZN of new sales over the life of the project as a result of amending cattle nutrition practices. This estimate does not include cost savings from quality enhancements and new efficiencies in the value chain as a result of PSCEP activities.

B2. Milk Quality Advancement

PSCEP will undertake two activities in order to advance milk quality within the network of producers that supply to Pal Sud and Belesuvar Agro. The first relates to support services of testing laboratories, and veterinary service providers. The other involves support directly to the milk collection center in order to plan their growth and improve their quality standards.

PSCEP's efforts to increase quality management are tied to sector capacity building will be carefully targeted and, in so far as possible will be linked to specific measurable outputs in sales, jobs, and investment. Training for the Lankaran zonal veterinarian's office and laboratory will be decided upon based on an audit of those facilities conducted in August and the expected new business to that center resulting from technical assistance¹⁵.

If there is a significant measurable benefit in terms of sales, jobs, or investment to producers linked with and Belesuvar Agro by increasing testing capabilities to include feed testing then PSCEP will take action¹⁶. However, issues of milk quality training and milk quality management are directly tied to measurable increases in sales of our anchor processor firms which are estimated to increase 15% in sales or 300,000 AZN over the course of the project.¹⁷

As PSCEP's relationship with processors deepens opportunities may arise to provide technical assistance in the area of plant optimization, staff training and utilization, and best business practices¹⁸.

¹⁵ At present the laboratory conducts testing in: 1) Emfizematoz karbunkul, 2) Bruselosis, 3) Tuberculosis, 4) Taundice/ icterus, 5) Tinnois, 6) Exinokkosis, 7) Hemosporidosis, 8) Listeriosis, and 9) Pasterellosis.

¹⁶ For more information regarding the cost-effectiveness of engagement with veterinary services in Azerbaijan see Mercy Corps, "Final Report, Cluster Access to Business Services," October 31st, 2007.

¹⁷ Estimate based on a 15% change on monthly sales of 83,000 AZN

¹⁸ In June of 2008, a USAID funded project implemented by CHF successfully established a collection center in partnership with and a municipality in Chakhyrly, Masalli. Through a renovation to a municipality building provided as a grant by CHF, an investments in equipment on the part of, and agreements with the local municipality, a new collection center was created that continues to succeed more than a year later. While this type of activity is a clear success, it has not changed the sector or altered firm level practices. PSCEP's engagement with and Agro assumes deeper collaboration at the processing level as our relationship with and Agro deepens but is concerned chiefly with a transformative regional change in the sector created through work to advance nutrition, milk quality,

PSCEP tactics for the advancement of Milk Quality described above mirror those for our work to promote and enhance dairy cattle nutrition in the region. Through our relationship with Pal Sud, and Belesuvar Agro, PSCEP taps the commercial dairy collection networks in the southern region and through these networks reaches lead producers affiliated with each collection center. Technical assistance is provided to lead producers but the collection centers themselves assume a more prominent role in this facet of our action plan as a portion of the milk assembly technical assistance is provided directly to the collection centers themselves through our local specialist through foreign technical assistance. This training has been initiated through our local specialist and will move into more advanced aspects of milk quality work utilizing foreign technical assistance in August.

B3. Access to Finance

PSCEP will engage PalSud and other large processors to encourage supply side financing to producers of high-nutrition feed supplements to increase milk production quantity and quality. To support this effort the project will seek out geographically relevant feed mills and provide technical assistance to improve feed production efficiency allowing for unit feed price reductions and encouraging milk producers to take advantage of this potentially underutilized, cost-effective resource.

For dairy processors, such as Belesuvar Agro and others, PSCEP will support operational leasing of processing and transportation equipment. As this equipment can be expensive with capacity that a dairy processor may outgrow before the useful life of the equipment is over or equipment that may become obsolete before its useful life is consummated. Modern equipment has the potential to significantly increase sales of processors and improve the efficiency of the value chain in so far as it is scale appropriate and the client has the resources to maintain it.

At the production level the project will support the grouping of farmers to receive crop input and feed financing with delayed payment until harvest time or processor payment, as well as operating capital loans. Given these loan instruments farmers will be able to purchase critical nutrition and feed supplements in order to raise milk production levels.

Probably outcome of leveraged finance and investment activities are expected of between 15 and 20 M AZN over LOP. Estimates are a result of perceived demand for finance and investment services and capacity deficit throughout the value chain inclusive of input supply, refrigerated transport, lab testing, and processing equipment leasing.

B4. Association Development

While PSCEP broadly supports official registration of dairy industry associations in the south our strategy takes for granted their lack of capacity by partnering with processing facilities and utilizing their collection centers as a defacto associative entity. As our technical interventions and our finance and investment promotion efforts yield fruit we will suggest to producers the

access to finance and investment, and association development at a producer level that is aggregated through commercial collection networks.

formulation of a southern area dairy producers association. Via this mechanism access to best practices and a support network of dairy sector practitioners will come together for the betterment of the sector and of their own enterprises. Given that efforts to develop officially registered agri-business associations in Azerbaijan have met with resistance by the GoAJ in the past, we will begin with a less formal strategy and move forward as producer demand increases¹⁹. As part of this drive to better integrate the sector in the southern region of Azerbaijan we will also investigate partnership with the Azerbaijan Dairy Processors Association, created with the assistance of Land O' Lakes in 2001, still functioning in a limited capacity but never formally registered.

C. Impact

Key expected contractual indicator results include:

- 2.3 million AZN sales increase per year based on an expected 20% increase in milk production efficiency (quantity and quality) and a 50% increase in processor sales over the life of the project.²⁰
- Leveraged finance and investment of approximately US\$15-20 M.²¹
- Establishment of a southern dairy producers association.

Based on an expected 20% increase in milk production efficiency (quantity and quality) the project expects to increase sales by \$2M AZN per year at . Milk quality enhancement efforts at will add an additional 300,000 AZN in sales. Parallel activities with the collection centers of Belesuvar Agro will add an additional 700,000 AZN in sales. These activities will total an increase of 3M AZN.

In order to accomplish this, the project will rely on the efforts of its Lankaran-based BDS, LBC/AAC, as well as specialized STTA, a dairy expert is expected to arrive in July for a three-week assignment in the dairy sector. Further assignments can be expected depending on the determined need of producers and processors.

D. Timeline

Annex A provides a detailed Gant chart detailing activities through December 2009. Principal activities include:

¹⁹ For more information on challenges of association registration in Azerbaijan see, Checchi and Company Consulting, Inc./The Louis Berger Group, Inc. Joint Venture. "Evaluation of the Participatory Agriculture Project (PAPA) Program in Azerbaijan," July 2003

²⁰ This figure assumes 30% increase on current average daily production in targeted area of 20 tons/day and a wholesale price of 1 AZN per liter and a 300,000AZN sales increase relating to quality improvement.

²¹ Estimate a result of perceived demand for finance and investment services and capacity deficit throughout the value chain inclusive of input supply, refrigerated transport, lab testing, processing equipment leasing, and supply side feed concentrate financing.

Summary of Activities, Timetable, and Planning Chart for Dairy Action Plan: 2009					
Category	Activity	Month	Counter-part	PSCEP Input	PSCEP LOE
Cattle Nutrition and Feed Issues:	Identify several viable feed concentrate manufacturers with whom to cooperate to optimize feed nutritional value and cost effectiveness.	May – Sept 2009	Balakans Feed, other feed producers	PSCEP will provide a technical expert to work with the feed manufacturers to optimize nutritional value and cost effectiveness of feed production	3 Weeks: foreign consultants; Ongoing, Local Consultant and BDS provider
	Engage producers in capacity building exercises focused on breed standard-based nutrition regimens and cost effective feed regimens	May – Oct 2009	PalSud and Belesuvar Agro, LBC/JABC	PSCEP will provide a local dairy specialist and foreign technical expert to work with producers and collection centers	3 Weeks: foreign consultants; Ongoing, Local Consultant and BDS provider
Milk Quality:	Engage producers and processors on milking hygiene, milk preservation to improve milk quality	June- Aug 2009	PalSud and Belesuvar Agro, LBC/JABC	PSCEP will provide a local dairy specialist to work with producers and collection centers	3 Weeks: foreign consultants; Ongoing, Local Consultant and BDS provider
	Enhance support services, such as testing laboratories, and veterinary service providers	Aug 2009	Zonal Veterinary Laboratory, Lead Processors, Collection Centers	PSCEP will provide the expertise to evaluate local milk testing facilities	3 Weeks: foreign consultants; Ongoing, Local Consultant and BDS provider
	Improve quality standards for milk by providing consultation and review of collection center procedures.	May-June 2009	Foreign and local technical consultants, collection centers of lead processors	PSCEP will provide the expertise to independently evaluate milk collection and process	3 Weeks: foreign consultants; Ongoing, Local Consultant and BDS provider
Finance and Investment:	Encourage supply side financing to producers of high-nutrition feed supplements to increase milk production quantity and quality	Aug-Dec 2009	PalSud and Belesuvar Agro, Balakans	PSCEP will provide a technical expert to work with the feed manufacturers to optimize nutritional value and cost effectiveness of feed production	4 Weeks: foreign consultant; ongoing, finance VCS
	Support operational leasing of processing and transportation equipment	Aug-Dec 2009	Belesuvar, Pal Sud, operational leasing companies	PSCEP will support operational leasing of processing and transportation equipment.	4 Weeks: foreign consultant; Ongoing, Local Consultant and BDS provider
	Support the farmers' groups to receive crop input, feed financing, processor payment, as well as operating capital loans	Sept-Oct 2009	Local banks	PSCEP will support loans for farmers to enable them to purchase critical nutrition and feed supplements in order to raise milk production levels.	3 Weeks: foreign consultant; Ongoing, Local Consultant and BDS provider
Association Development:	Promote the development of a dairy association in Southern regions Azerbaijan by working with collection centers as defacto associative entities	May – Dec 2009	Pal Sud, Belesuvar collection centers, LBC/JABC	PSCEP will harness the natural associative structure of the collection centers for large processing companies to develop associations of producers	No Cost. Ongoing, local consultant and BDS provider

SECTION IV: ANNEXES

ANNEX A: DAIRY VALUE CHAIN GANTT CHART

Chemonics		PSCEP: Year 1 Action Plan: Dairy Value Chain											
1 Advance Cow Nutrition		Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
1a.	General: Identify Lead Producers					x							
1b.	General: training on proper cattle nutrition					>> x							
1c.	Forage: determine availability of improved varieties and fertilizers							>>	<				
1d.	Feed: identify feed manufacturers and distributors					>> x							
1f.	Feed: Identify feed testing systems for optimized cattle nutrition							>>	<				
1g.	Feed: study ingredients, availability and sources for feed							>>	<				
1h.	Feed: training on breed standard model feed formulations							>>	<				
1i.	Feed: training on feed component substitutes							>>	<				
1j.	Irrigation: conduct benefits and awareness training							>>	<				
1k.	General: Identify and apprise Lankaran Regional Vetrinarian of activities	x					x x						
1l.	General: meet with PalSud and Belesuvar Agro Technical Specialist			x		x	x	x	x	x	x	x	x
1m.	General: disseminate best practices through local training outlets					x x	x x	x x		x x	x x	x x	x x
2 Advance Milk Quality		Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
2a.	Testing: identification of testing laboratories for raw milk								x				
2b.	Testing: audit testing facilities and capabilities in the region								>> x				
2c.	Testing: sample bacteria and SC testing with lead producers at testing facilities								x				
2d.	Raw Milk Quality: conduct awareness and benefits training					x x	x x						
2e.	Raw Milk Quality: training on good milking and milk handling processes					x x	x x						
2f.	Milk Collection Center: growth plan creation through BDS provider								x x				
2h.	Milk Collection Capacity growth plan signed								x x				
3 Finance and Investment		Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
3a.	Support supply side financing to producers for high-nutrition feed supplements to increase milk production quantity and quality								>>				<
3b.	Encourage operational leasing of processing and transportation equipment								>>				<
3c.	Support farmers' groups to receive crop input, feed financing, processor payment, and operating capital loans									>>	<		
4 Association Development		Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
5c.	Promote the development of a dairy association in Southern regions of Azerbaijan					>>							>

ANNEX B: VALUE CHAIN DESCRIPTION

As charts 1-4 are viewed please keep in mind that the physical and service inputs are inputs required by the primary function listed in the same column and the physical and service outputs are outputs produced by that function

Figure 1

Typical Requirements & Outputs of Each Function of a Dairy Value Chain

FARM	⇒	PRODUCTION	ASSEMBLY	PROCESSING	DISTRIBUTION	MARKETING	SALES	⇒	MARKET	
IN PUTS	Physical Inputs Needed	Livestock & Crop Inputs	Milk Collect.Ctr. Cooling Tank	Raw Milk Processing Inputs	Refer. Trucks Cold Storage Equip.& Facilities	Mktg. Staff Com.Media Infra. Office & Equip.	Sales Staff Retail Outlets Office & Equip.			
		Admin.Inputs	Truck/Tractor	Equip.&Facilities						
			Testing Equip Testing Supply							
			Animal Health Eqp&FacM&R Mgmt.Advice Training	Eqp&FacM&R Transportation	Equip/Facil. M&R Consulting/Training Out Sourcing	Equip/Facil.M&R	Eqp&FacM&R Mktg. Agency Com.Media	Eqp&FacM&R		
Outputs	Physical Outputs	Raw Milk Meat Animals Organic Fert.	Cold, Graded Milk	Pasteurized Milk Final Dairy Products	Transportation Storage Shelf Stocking	A&P Materials	Prodct Placemt.			
			Measurement			Concept&Desgn.	Sales Records Cust. Feedback			
	Service Outputs	Custom Mach. Work	Testing Grading Payments			Logistics Advice Product Monitoring				

Figure 1 Inputs and Outputs for the Dairy Value Chain

During this assessment of the dairy value chain (DVC) there was not enough time to identify all the participants and potential participants in the Azerbaijan DVC. However there was adequate time to determine the major weaknesses. Therefore Charts # 2,3 & 4 highlight the weaknesses and Charts # 5 & 6 identify some of the participants.

Figure 2 highlights **Physical Input weaknesses** for each respective function

Figure 2

Details of The Azerbaijan Dairy Value Chain Functional Needs

Top priorities for Azerbaijan are high lighted in **RED ITALICS**

Secondary priorities for Azerbaijan are high lighted in **Blue**

FARM	→	PRODUCTION	ASSEMBLY	PROCESSING	DISTRIBUTION	MARKETING	SALES	→	MARKET
PHYSICAL INPUTS		Livestock	Transportation	Raw Milk Other Proc.Inputs	<i>Refrig.Trucks</i> Small-City Dist. Large-Long Haul	<i>Prof.Mktg.Staff</i> A&P Infrastruct. Mktg. Agencies TV, Radio, etc.	<i>Prof.SalesStaff</i> Dairy Processor Wholesaler Retailer		
		<i>Forages</i>	To MCC						
		<i>Concentrates</i>	Farmer tractor	Packaging Local					
		Equipment	Custom Hauler	Production					
		Imprv.Genetics	Truck/wagon	Imported Cleaning Agents	<i>Cold Storage</i> In Key Cities	Office&Equipmt. Dairy Focus	Retail Outlets Small Medium Large		
		Buildings		Additives					
		Crops	To Dairy Proc.	Energy	Office Facil.&Eqp.				
		<i>Irrigation</i>	InsulatTanker						
		Imprv.Varieties	Cooling/Store	Plant Labor <i>Mangement</i>	Logistics Software Acctng. Software		Equipment Location <i>Management</i>		
		Fertilizer	<i>Cooling Tank</i> at Milk CC						
		PP Products	on Farm						
		Equipment	Testing Equip.						
		Storage	Milk Analyzer						
		Mgmt./Admin.	Antibiotic Test						
		Office Equip.	Measuring Pail						
		Software							

Figure 2 Dairy Value Chain Functional Needs

Figure 3 highlights the **service input weaknesses** for each respective function

Figure 3

Details of The Azerbaijan Dairy Value Chain Functional Needs

Top priorities for Azerbaijan are high lighted in **RED ITALICS**

Secondary priorities for Azerbaijan are high lighted in **Blue**

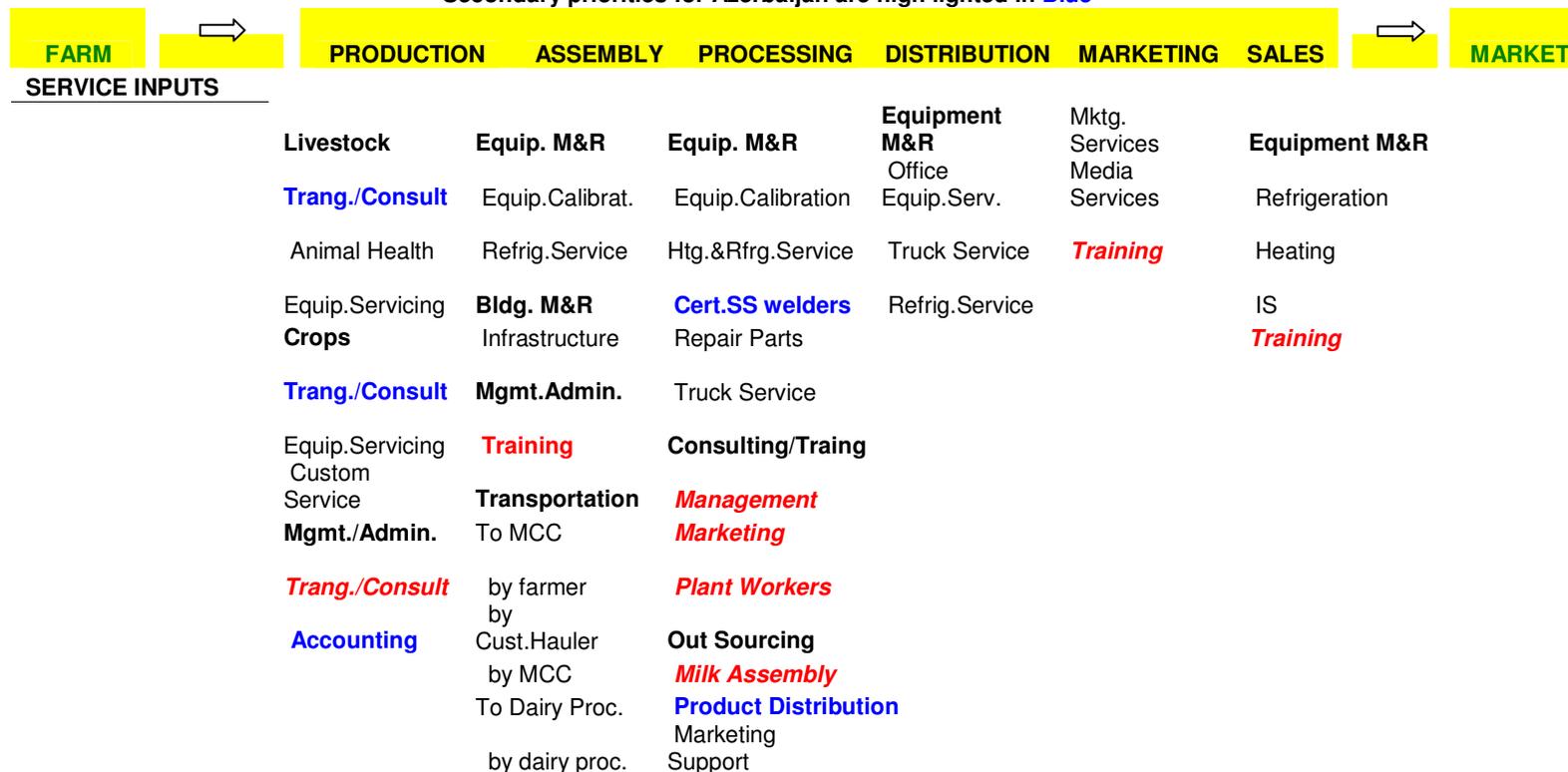


Figure 3 Dairy Value Chain Functional Needs

Figure 4 identifies both the **physical and service outputs** of the Azerbaijan Dairy Value Chain and highlights several weaknesses

Figure 4

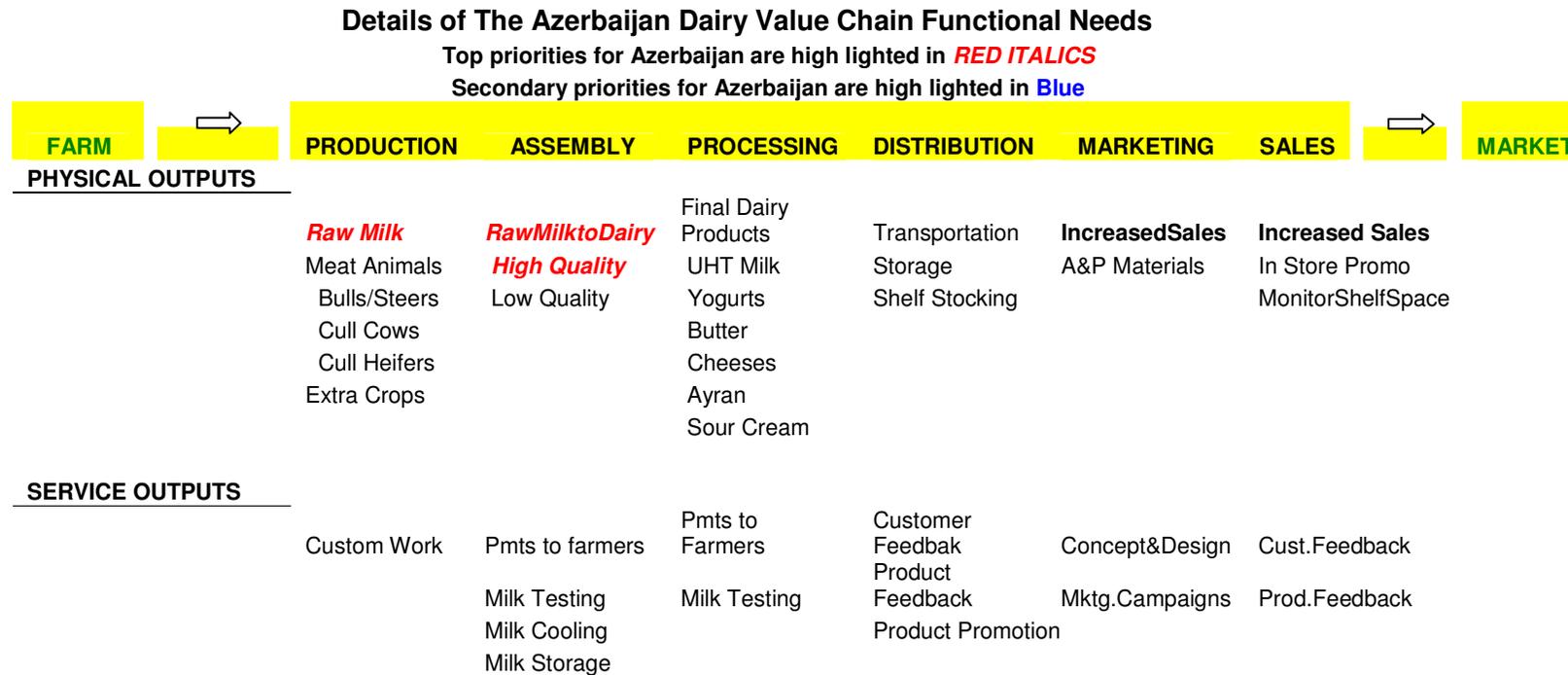


Figure 4 physical and service outputs for the Azerbaijan Dairy Value Chain

There are other weaknesses but those highlighted are believed to be the most critical and those which the PSCEP project can likely focus on given the project TOR and funding limitations.

Figure 5 identifies some of the **service provider participants** in the Azerbaijan Dairy Value Chain

Figure 5

Azerbaijan Dairy Value Chain Participants
 Top priorities for Azerbaijan are high lighted in **RED ITALICS**
 Secondary priorities for Azerbaijan are high lighted in **Blue**

	PRODUCTION	ASSEMBLY	PROCESSING	DISTRIBUTION	MARKETING	SALES
Service Providers	<i>Potential Training Providers BDS's, Ag Academy Ganja</i>	has 8 Milk collection Centers	Product Packaging Suppliers	Wholesalers & traders	Marketing Agencies	Retail Shops & Supermarkets
	<i>Farm Mgmt. Consulting (BDS?)</i>	Belesuvar Agro has 20 collection centers Mpro has 20 Milk collection centers Palmali has 7 Milk Collection Centers	Cultures & Other Ingredients Standards Trng. & Cert. Support			
	<i>Balakan Feed Mfg.</i>		Equipment M&R Specialists			
	<i>State Vet Offices</i>		Dairy Equipment Dealers	Waste Disposal Services		
	No Dairy Equip.Dealers		Milk testing equipment & supplies Milk transporting services	Electricity & Fuel Services		
	Field Equipment Dealers Farm Supply Dealers					

Figure 5 Value Chain Participants

Figure 6 identifies some of the **primary participants** in the Azerbaijan Dairy Value Chain

Figure 6

Primary Participants in the Azerbaija Dairy Value Chain

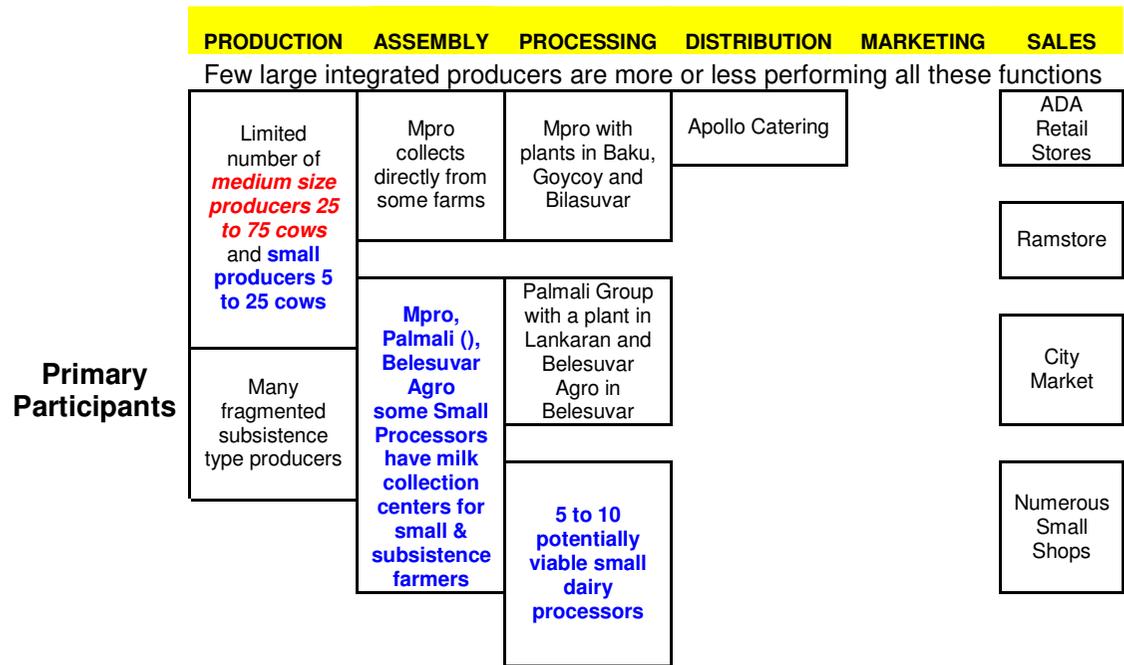
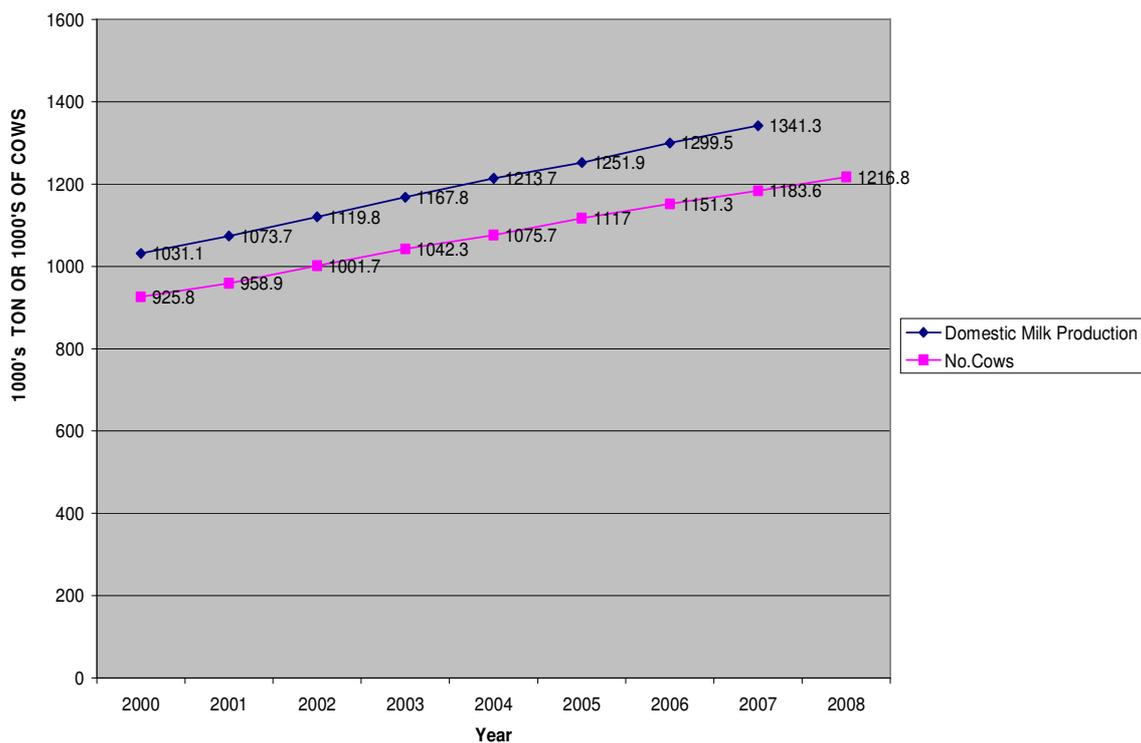


Figure 6 Primary Participants of the Azerbaijan Dairy Value Chain

As can be noted from the red and blue highlights in the charts above much of the emphasis in improving competitiveness in the Azerbaijan DVC needs to be focused on primary production and assembly. It is imperative that both efficiency and quality improve at the milk production level.

Graph # 1 below indicates that milk yield per cow has improved very little in the last eight years. The total milk production has increased almost in parallel to the increase in the total number of cows indicating that yield per cow has almost stayed the same at about 1100 liters per cow per year. The quality in terms of all milk components is very poor. There is a common misconception that milk quality refers only to the chemical components of milk such as fat, protein, minerals, vitamins etc. While these are valuable components, the true indicator of quality from a food safety stand point is the microbiological components of bacteria and somatic cells.

Graph # 1 Domestic Milk Production & Cow Numbers



ANNEX C: STRENGTH WEAKNESS OPPORTUNITY AND THREAT ANALYSIS

<p style="text-align: center;">STRENGTHS:</p> <ol style="list-style-type: none"> 1. Government Support at Production Level 2. Several New Dairy Plants 3. Pasture Land Suitable for Livestock Grazing Available for Irrigation 	<p style="text-align: center;">OPPORTUNITIES:</p> <ol style="list-style-type: none"> 1. Large Domestic Dairy Product Market 2. Potential for Product Differentiation to higher value products 3. New Genetics can be Introduced 4. More Collection Stations Can Increase milk supply available to processors 5. Improved Credit Availability at Production level can facilitate infrastructure improvement 6. Irrigate more hectares by upgrading system 7. Improve Human Resource Training
<p style="text-align: center;">WEAKNESSES:</p> <ol style="list-style-type: none"> 1. Poor Dairy Cattle Nutrition and Cattle Husbandry in General 2. Poor Quality of Forages in General 3. Poor Quality of Raw Milk 4. Many small, scattered dairy farms 5. Poor Dairy Cattle Genetics 6. Lack of Management Skills & Workforce Training throughout the dairy VC. 7. Lack of Dairy Cattle Concentrates 8. Poor Veterinary Services 9. Lack of Equipment Dealers 10. High Distribution Costs 11. High Retail Sales Costs 13. Low Dairy Plant Utilization 14. Commodity Oriented Product Line 15. Limited Support Services 	<p style="text-align: center;">THREATS:</p> <ol style="list-style-type: none"> 1. Increased Foreign Competition 2. Potential Cattle Disease Outbreaks 3. Dairy VC may not Improve Fast Enough to Gain a Significant Share of the High Value Dairy Product Market Dominated by Imported Products

The above SWOT analysis itemizes a lengthy list of weaknesses as noted in the constraints listed above and several significant threats, but does indicate several realistic and important strengths and opportunities. One of the strengths is the government's recognition of the need to develop alternative industries to the oil industry and their willingness to provide some short term support to agriculture in general. This may signal a willingness to make necessary policy and regulatory changes that support competitive development of the DVC. The PSCEP project and/or other relevant USAID projects should take advantage of this and encourage beneficial policy/regulatory changes such as early adoption of a milk quality decree leading to EU standards over time. Another strength is the fact that private investors have made and are making investments in new dairy processing plants. This is an indication of investor confidence in the sub-sector. It also creates a reliable, and in areas of overlap, a competitive market for dairy producers milk which is exactly the incentive needed to support dairy producer development.

ANNEX E: VISITS AND CONTACTS

List of Visits and Contacts		
Date	Description	Contact
4-Dec-08	Orientation and research in PSCEP office	
5-Dec-08	Meeting with MilkPro Director Mr. Tahir Mammedov in Baku	050 225 4212
5-Dec-08	Met with World Bank Senior Operations Officer Mr. Rufiz Chiragzade and Mr. Brian Bedard, Veterinary Specialist	
6-Dec-08	Visit and meeting at Haji Chamalxan Firm integrated dairy Operation in Salyan. Met with Director Alikram Diamalov	(99412) 465 6895
10-Dec-08	Met with Mr. Islam Guseynov, Director of the Azerbaijan Milk Processors Association in Baku.	(99450) 223 4145
11-Dec-08	Met with Apollo Catering & Import Company Procurement Manager, Mr. Namik Sadkhov	(99412) 510 5390/91 or 050 220 1158
12-Nov-09	Met with ADA Group Member of Board of Directors Mr. Sadyar Aliyev (Responsible for procurement)	050 212 4939
12-Dec-09	Travel to Lankaran and met with Mr. Eldar Farajov, Deputy Director of the PalMali Group dairy processing plant in Lankaran	(99412) 498 2667
12-Dec-09	Met Mr. Ramiz Huseynov, Milk Procurement Director for the PalMali Group who took us to one of their milk collection stations	050 687 1089
12-Dec-09	Visited dairy farm of Mr. Hambila who has 22 cows and 70 total cattle	050 326 2246
13-Dec-09	Met with Mr. Adalat Nahmatov Director of ABAD BDS in Jalilabad	050 363 8299
13-Dec-09	Met with Mr. Teymurov Igtidar, Director of the Zonal Veterinary Laboratory in Lankaran	
13-Dec-09	Met with Specialist Elshan Agayev with the CHF Ag Project in Lankaran	050 255 9566
14-Dec-09	Visited a milk collection center and farmer Mr. Gaderof Gadiz near Jalilbad, Village Chakhizly he had 7 cows and traveled back	050 314 9110
15-Dec-09	Met with Mr. Ismail Hasanov Chief Veterinarian Officer for Azerbaijan	
17-Dec-09	Travel to Goycay and met with MilkPro Dairy Plant Director Mr. Mustafa Badalov and Agshin who was responsible for milk Procurement and then traveled to Ganja	050 200 3069 or 050 235 5705
18-Dec-09	Met with GBG BDS Deputy Director Mr. Arif Cahangirov	050 361 0370
	GBG cooperating specialists; Mr. Yasin Gozalov,	
	Animal Husbandry Specialist, Mr. Abhasov Suleddin Animal Husbandry and Mr. Nizami Seyidalizev Plant Breeding Specialist	
18-Dec-09	Met with Mr. Mirdamad M. Sadigov, Rector of the Azerbaijan Agriculture Academy located in Ganja	050 211 5227
	Dean of the Veterinarian Faculty, Mr. Alijev Mirza Mikayil	050 643 4487

ANNEX F: ANCHOR PRODUCERS AT

Anchor Dairy Producers by Collection Center for			
No.	Collection Center	Number of Cows	Location
1 Sharafa (Masalli)			
1.1	Rzayeva Solmaz	30	Sharafa Village
1.2	Abbasov Umudali	28	Sharafa Village
1.3	Volosov Khalil	25	Sharafa Village
1.4	Khasiyev Ismayil	34	Allar Village
1.5	Khalilov Famil	39	Allar Village
2 Boladi Collection Center (Lankaran)			
2.1	Tahirov Khanbala	32	Bolady Village
2.2	Hasanov Gazanfar	27	Bolady Village
2.3	Jabbarov Ilgar	35	Zovla Village
2.4	Dadashov Salman	40	Zovla Village
2.5	Abbiyev Zakir	60	Zovla Village
3 Mahmudavar Milk Collection (Masalli)			
3.1	Ahmadov Iftikhar	25	Kolatan Village
3.2	Abbasov Fakhraddin	30	Kolatan Village
3.3	Sadikhov Etibar	29	Kolatan Village
3.4	Bayramov Nuraddin	27	Kolatan Village
3.5	Orujov Fakhraddin	74	Kolatan Village
4 Boradigah Milk Collection Center			
4.1	Mirzayev Maharramali	28	Boradigah Village
4.2	Mammadov Mohtabar	25	Boradigah Village
4.3	Kazimov Nuraddin	31	Vilvan Village
4.4	Abdullayev Shirzad	43	Vilvan Village
4.5	Abdullayev Afrail	53	Vilvan Village

1. ANNEX F: Anchor Dairy Producers engaged by PSCEP through