

KOREAN DAIRY SECTOR IN TRANSITION

YOO CHUL-HO*

Key words: market liberalization for dairy products, oversupply problem of raw milk, differential pricing for raw milk

ABSTRACT

The process of expansion of Korean dairy sector is reviewed in terms of the value of raw milk produced, supply and demand for dairy products, number of dairy farms and cows, herd sizes, ongoing change in the location of dairy farming, etc. Relevant government policies regarding pricing for raw milk and institutional changes are presented. With the market liberalization for dairy products in 1996, the sector faces a challenge. The strategy for 'a stable growth of the industry' with strengthened quality competitiveness of drinking milk by the government faces a problem of balancing the supply and demand of raw milk, due to oversupply of raw milk in recent years and a continued declining demand for drinking milk. As a way of resolving the current oversupply problem of raw milk, some basic policy guidelines to follow are drawn.

1 . Introduction

The Korean dairy sector has grown and undergone a significant change since 1990. In terms of the value of raw milk produced, the sector had grown at 7.6 percent per annum to 1.4 trillion won in current prices in 2001 (1.1 billion U.S. dollars). In addition, the value of culled dairy cows slaughtered for beef amounted to 71.3 billion won (56.0 million U.S. dollars) in the same year.¹

* Research Director, Korea Rural Economic Institute, Seoul, Korea.

The dairy sector's share to the total value of animals and animal products produced in 2001 was 18.1 per cent.²

Since commercial milking first started in the early 1960s, the raw milk produced reached over two million tons in the late 1990s with increasing consumer demand for fresh milk and other dairy products. Raw milk production increased to over 2.3 million tons in 2001, even with a successive decrease in the number of dairy farms, owing to an increase in the numbers and productivity of cows.

The industry has been undergoing a serious structural adjustment since the market for all dairy products was liberalized in 1996. With an increase in the imports of dairy products in recent years, the rate of self-sufficiency in dairy products has been dropping and the number of dairy farms has decreased.

Since the early 1990s the government has prepared and implemented various dairy policies in order to enhance the competitiveness of domestically-produced dairy products in order to minimize the adverse effects of the imports of low-priced dairy products on Korean dairy farmers. Among the policies implemented, a high priority has been placed on upgrading the quality of fresh drinking milk, as an essential means of survival in the liberalized market for dairy products. Korea foresees that fresh drinking milk, among other categories of dairy products would be able to retain competitiveness because of the high cost that would be incurred in bringing fresh drinking milk into the country.

The purpose of this paper is two-fold : first, to review the changes underway in the dairy sector, along with the government

¹ The ratio of dairy cows slaughtered to the total number of cattle slaughtered in 2001 (729,000 head) was 10.2 %.

² Including the value of culled dairy cows for beef in the share. The value shares of other major animals and their products in relation to the total value of the animal sector produced (8.3 trillion won in current prices) in the same year were: pigs, 32.4 %; Korean native beef cattle (or 'Hanwoo') plus dairy bulls, 20.5 %; chicken and eggs, 20.3 % (Korean Ministry of Agriculture and Forestry, *Agricultural & Forestry Statistical Yearbook* 2002, 283).

dairy policy implemented since 1990; and second, to outline a set of policies to be pursued in the future to meet the challenges for stable growth in the Korean dairy sector.

II. Changes in the Dairy Sector since 1990

1. Supply and Demand for Dairy Products

The total consumption of drinking milk and dairy products in 2001 was 3.0 million metric tons in raw milk weight equivalent. The total consumption of drinking milk and dairy products has increased by 4.4 percent per year since 1990, with increases both in income and population. Per capita consumption in 2001 reached almost 64 kg (Table 1).

Up to the late 1980s, most of the milk consumed had been domestically supplied. Imports of milk products started in the early 1990s, with the increase in demand for milk products. The imports of dairy products continued to increase up to 1997. However, a sharp increase in the imports of dairy products in 1996 and 1997 was followed by a big decrease in 1998 with the economic setback triggered by the 1997 foreign exchange crisis.³ Imports of dairy products bounced back in 1999, exceeding the 1997 level with a rebound of the economy in 1999. Also with the opening of the market for all dairy products, a few years earlier in 1966 in accordance with the mandate on market opening for all agricultural products under the Uruguay Round Agreement on Agriculture in 1994, Korean dairy imports again increased sharply afterwards. In 2001 the imports amounted to 652,600 tons in raw milk equivalent, or 18.6 percent of the milk

³ In 1998, drinking milk consumption and imports of dairy products decreased sharply. The number of dairy farms also decreased at a fast pace.

During the crisis, particularly from late 1997 to mid 1998, the Korean currency “won” was devaluated sharply against the U.S. dollar. The steep devaluation of the Korean currency began to level off in late 1998. The Korean exchange rates to the U.S. dollar during 1996~99 were: 804.8 won in 1996; 951.1 won in 1997; 1,398.9 won in 1998, and 1,189.5 won in 1999, respectively.

TABLE 1. Balance of Milk and Dairy Products, 1990-2001

	1990 ¹⁾	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total Consumption (000 ton)	1,879.0	1,869.2	1,920.4	1,983.7	2,078.3	2,143.8	2,465.4	2,439.9	2,286.3	2,747.4	2,798.3	3,026.2
-Domestic (000 ton)	1,879.0	1,698.2	1,850.7	1,947.3	1,917	1,948.0	1,990.7	1,995.4	2,004.7	2,291.5	2,158.7	2,373.6
-Imported (000 ton)	0.0 ²⁾	171.0	69.7	139.7	131.0	195.9	474.6	444.5	281.7	455.9	639.6	652.6
Export (000 ton)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.3	12.6	4.7	8.3	19.5
Self-sufficiency (%) ³⁾	101.2	94.3	98.0	95.3	94.4	93.9	85.2	85.8	92.4	85.2	82.1	81.4
Per Capita Consumption (kg)	43.8	43.2	44.0	45.1	46.8	47.8	54.5	53.3	49.2	58.6	59.2	63.9
Per Capita GNP (U.S. Dollars)	5,886	6,810	7,183	7,811	8,998	10,823	11,380	10,315	6,744	8,595	9,770	8,900
Total Population (0,000)	4,287	4,330	4,375	4,420	4,464	4,509	4,553	4,595	4,629	4,662	4,701	4,734

Note: 1) Figures for December of each year.

2) For 1990, milk imports were less than 500 metric tons, denoted as 0.0.

3) Self-sufficiency (%): (Domestically-produced milk consumed for the year + Milk export + Year end stock of domestically-produced milk) / (Consumption for the year) × 100.

Sources: 1) MAF(2003).

2) MAF and KDC(2001).

3) NACF(2003).

4) NSO(<http://www.nso.go.kr>).

consumed for the year.

Along with the increased imports, the variety of imported dairy products has been increased to meet consumers' demand for more varied products. Among the imports of dairy products in 2001 (Table 2), whey, cheese and mixed milk powder were three major import products, accounting for 67.7 percent of total weight (134,500 tons) and 64.2 percent of total dollar value (240.6 million U.S. dollars).

Among the dairy products imported, a high volume import of mixed milk powder has caused grave concern to domestic raw milk processors and to the dairy sector in general since the late 1990s. Because the price of the mixed milk is lower than those of other powdered milks (skimmed or whole), due to a lower

TABLE 2. Imports of Dairy Products, 1995-2001

	1995	1996	1997	1998	1999	2000	2001
Raw Cream							
-tons	0	0	8,158	3,259	5,164	3,060	392
-(1000 U.S. Dollars)			(9,148)	(4,364)	(6,277)	(3,552)	(361)
Skimmed Milk Powder							
-tons	7,044	872	1,927	2,648	2,842	3,004	5,240
-(1000 U.S. Dollars)	(14,860)	(2,896)	(3,897)	(4,243)	(4,247)	(4,939)	(10,480)
Whole Milk Powder							
-tons	532	221	441	194	461	693	1,540
-(1000 U.S. Dollars)	(1,194)	(521)	(850)	(369)	(728)	(1,309)	(3,269)
Whey							
-tons	0	0	22,986	24,015	30,619	38,883	38,604
-(1000 U.S. Dollars)			(19,697)	(17,958)	(21,864)	(25,232)	(28,567)
Butter							
-tons		535	1,152	498	896	947	1,094
-(1000 U.S. Dollars)		(1,487)	(2,298)	(1,213)	(1,965)	(1,997)	(2,196)
Processed Butter							
-tons	11,348	12,301	11,510	7,383	11,335	14,468	11,705
-(1000 U.S. Dollars)	(23,646)	(29,076)	(22,261)	(15,119)	(21,718)	(24,971)	(19,664)
Cheese							
-tons	11,074	14,717	19,199	13,263	21,284	30,640	34,250
-(1000 U.S. Dollars)	(33,944)	(50,470)	(59,545)	(35,905)	(55,157)	(70,750)	(86,995)
Lactose							
-tons	0	11,588	11,763	10,740	12,462	15,107	14,725
-(1000 U.S. Dollars)		(8,696)	(9,172)	(7,422)	(7,601)	(8,884)	(8,382)
Processed Milk Powder							
-tons	1	48	519	380	793	1,846	3,333
-(1000 U.S. Dollars)	(14)	(308)	(1,705)	(1,111)	(2,463)	(6,034)	(12,205)
Mixed Milk Powder							
-tons	28,007	32,242	23,552	12,285	21,795	24,573	18,215
-(1000 U.S. Dollars)	(59,839)	(78,906)	(49,977)	(24,232)	(34,839)	(42,057)	(38,919)
Casein							
-tons	0	0	5,511	4,257	5,140	4,899	5,331
-(1000 U.S. Dollars)			(28,743)	(20,769)	(24,195)	(23,550)	(29,445)
Others ¹⁾							
-tons	360	567	514	68	72	85	68
-(1000 U.S. Dollars)	(848)	(1,490)	(1,300)	(208)	(242)	(173)	(150)

Note: Others include condensed milk and fermented milk.

Sources: 1) MAF and KDC(2001, 131-137) and updated data from the KDC.

2) KDC. *Monthly Bulletin of Korea Dairy Committee*, No. 21(2001), and No. 27(2002).

tariff imposed for the product vis-a-vis other powdered milks,⁴ according to the Uruguay Round Agreement on Agriculture in 1994, the end-users of the product such as bakeries and confectioneries, prefer the imported mixed milk powder to other powdered milks, imported or domestically-produced. In other words, even though the importation of powdered milk (skimmed or whole) has effectively been curbed with high tariffs, the low-priced imported mixed milk has substituted for the milk powders domestically produced over the years since the market for the product opened in 1996. This has eventually confounded the problem of a high domestic stock of powdered milk, which has been worsening in recent years.

2. Change in the Number of Dairy Farms and Cows

The number of dairy cows changed from one year to another with small variations compared with other animals during 1990~2001.⁵ The number of dairy cow counts in 2001 survey were 548,000 head, up from 504,000 head in 1990 (Table 3).

However, the number of dairy farms decreased substantially during the period : in fact the number decreased by over 61 percent from 33,000 farms to 12,800 farms. Most of the reductions in the dairy farms have come from dairy farms of two small herd size groups : less than 10 head and 10~29 head.

⁴ The tariff schedule for the mixed milk powder starts with 39.6 percent *ad valorem* in 1995 and is to be lowered by 0.4 percent per year to 36.0 percent in 2004. On the other hand, the tariff for the other milk powders (skimmed and whole) starts with 215.6 percent *ad valorem* in 1995 and is to be scaled down 4.4 percent per year equally to 176.0 percent in 2004. The amounts of market access for skimmed milk are 621 tons between 1995 and 2003, and 1,034 tons in 2004. The amounts of market access for whole milk are 344 tons between 1995 and 2003, and 573 tons in 2004 (ROK 1994).

⁵ The number of dairy cattle, along with beef cattle, pigs and chicken have been surveyed on a quarterly basis : March, June, September and December. The survey results are the figures on the first day of the month with other statistics such as number of cows in milking in Livestock Statistics, published quarterly by the MAF and the National Agriculture Products Quality Management Service.

They constituted dominant groups in terms of the numbers of dairy farms and cows raised in total in the early 1990s. The two groups accounted for 91.5 percent of dairy farms and 73.8 percent of dairy cows raised in 1990. However, the combined proportions of farms belonging to the two herd size groups decreased to 34.5 percent and cows raised by the two groups decreased to 13.7 percent in 2001. On the other hand, dairy farms of larger herd sizes and cows raised by them increased in numbers over the years. Even dairy farms of herd size of 200-and-over-200 head started to appear for the first time in 1998. As a result, the average herd size increased from 15.1 cows to 42.7 cows during 1990-2001.

How far the ongoing trend of increasing herd sizes to continue in the future would depend on several factors to be evolved in the future. The most important factor of all would be the change in the government policy (Section 6). The government announced change in raw milk pricing effective July 1, 2002.⁶ The new pricing intended to lower the purchase price of raw milk from dairy farmers in order to resolve the ongoing oversupply problem of raw milk, which is examined in section 7.

3. Change in Location of Major Milk Production

There has been a gradual change in the location of milk production in Korea. A brief introduction regarding the development of the dairy industry in Korea would be helpful in understanding the locational change occurring in the sector.

The dairy farming started in Korea in the early 1960s with an eye to providing drinking milk to consumers in big cities,

⁶ The government is still the de facto price-setter for raw milk, even though the Korea Dairy Commission (KDC) is authorized agency for setting the raw milk price following the revision of the Dairy Industry Promotion Law in 1997.

The new pricing scheme faced a strong resistance from the dairy farmers' groups, and the enforcement postponed. The KDC started to apply the new pricing late October for raw milk the agency collected.

TABLE 3. Distribution of Dairy Farms and Cows by Herd Size, 1990–2001¹⁾

	1990 ²⁾	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Number of farms (000)	33.3	30.2	28.0	28.2	25.7	23.5	21.1	17.4	15.7	14.4	13.3	12.8
Number of cows (000)	504	496	508	553	552	553	551	544	539	535	544	548
- (Cows in milking, 000)	(230)	(233)	(241)	(252)	(253)	(253)	(252)	(248)	(247)	(247)	(255)	(258)
Less than 10 head												
- Proportions of farms (%)	39.0	33.1	27.8	21.1	18.0	15.0	13.5	10.4	10.0	9.5	6.2	7.4
- Proportions of cows (%)	14.5	11.5	8.9	6.2	4.6	3.5	2.6	1.7	1.5	1.3	0.8	0.8
10 ~ 29 head												
- Proportions of farms (%)	52.5	56.7	59.1	63.0	61.0	59.4	52.9	44.2	37.9	33.8	30.3	27.1
- Proportions of cows (%)	58.3	59.6	58.5	57.6	52.3	47.6	39.5	28.6	22.5	18.8	15.3	12.9
30 ~ 49 head												
- Proportions of farms (%)	6.6	8.2	10.6	13.1	17.1	20.0	26.0	32.1	33.1	33.4	35.5	32.3
- Proportions of cows (%)	15.8	18.0	20.9	24.1	28.9	31.1	36.5	38.6	36.6	34.4	33.5	29.2
50 ~ 99 head												
- Proportions of farms (%)	1.6	1.7	2.2	2.5	3.4	5.0	6.9	12.2	17.3	21.3	25.1	29.8
- Proportions of cows (%)	6.9	6.6	7.6	8.0	9.9	13.0	16.2	24.3	32.1	36.9	40.4	45.7
100 ~ 199 head												
- Proportions of farms (%)	0.3	0.4	0.4	0.4	0.5	0.6	0.7	1.2	1.5	1.9	2.6	3.3
- Proportions of cows (%)	4.5	4.4	4.2	4.1	4.2	4.8	5.3	6.7	5.4	6.3	7.9	9.3
200 and over 200 head												
- Proportions of farms (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.3
- Proportions of cows (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.3	2.1	2.1
Average herd size	15.1	16.4	18.2	19.6	21.5	23.5	26.1	31.3	33.7	38.2	40.7	42.7

Note: 1) The number of dairy farms and cows have been surveyed by 11 herd size groups in quarterly published Livestock Statistics : less than 10 head and other four groups by each 10 head increased interval, 50~99 head, 100~199 head and other three groups by each 100 head increased interval, and 500-and-over 500 head. However, in the Table 2, they are grouped into six.

2) Figures for December of each year.

Source: MAF and National Agriculture Products Quality Management Service, Livestock Statistics, Various issues.

such as the capital Seoul, the most populous city in Korea. It was thus natural that farms in areas close to Seoul, an enclave of Gyeonggi Province, started to raise dairy cattle. The dairy cattle were provided mostly by the milk processors (they are also distributors of drinking milk to consumers). The raw milk produced had been collected by the milk processors at the price

set by the government. Successively, raw milk production spreaded to outlying provinces, or localities. With the continued fast-paced development of the Korean economy and ensuing urbanization, the price of land in those areas appreciated in step with the increased demand for land for residential and industrial purposes. Concerns for the environmental problems associated with improper treatment of discharges from cattle raising has been heightened and stringent standards for discharged water quality from dairy farming have been in place since the early 1980s. For these two reasons, the dairy farms in those regions, particularly of small herd sizes have given up raising dairy cattle. On the other hand, dairy farms in other areas have been able to expand their herd sizes, or new starters in other areas have been able to begin raising cattle with larger herd sizes. The process of dairy relocation has been slow, but after the economy suffered from the financial crisis in 1997-98, the process seemed to have derived a momentum, as shown in Table 4. The ratios of farms and cows to the national totals have decreased significantly in the metropolitan area: the number proportions of farms decreased by 6.1 percent to 39.7 percent from 45.8 percent and the number proportions of cows dropped by 8.6 percent to 38.1 percent from 46.7 percent during 1995-2001. However, a high concentration of dairy farms in the Gyeonggi Province, still accounting for 39.7 percent in the country in 2001 is expected to persist in a foreseeable future. A main reason for the slow relocation of milk supply from the metropolitan area to other regions seems to be that the Seoul Dairy Cooperative which has been collecting the raw milk in the region over 60 years has turned out to be a reliable collector of the raw milk from the member farmers in the region (SMDC 1997).

TABLE 4. Change in the Numbers of Dairy Farms and Cows by Herd Size in the Metropolitan Area* in Selected Years

	1990	1995	2000	2001
Proportions of farms to the national total (%)	45.8	48.9	40.8	39.7
Proportions of cows to the national total (%)	46.7	43.2	38.6	38.1
Less than 10 head				
- Proportions of farms (%)	15.6	6.3	2.1	2.3
- Proportion of cows (%)	6.1	1.6	0.3	0.3
10 ~ 29 head				
- Proportions of farms (%)	25.8	28.5	11.8	12.3
- Proportion of cows (%)	29.0	22.8	7.2	5.9
30 ~ 49 head				
- Proportions of farms (%)	3.3	8.7	15.4	13.2
- Proportions of cows (%)	7.8	12.8	14.5	12.1
50 ~ 99 head				
- Proportions of farms (%)	0.9	5.0	10.6	11.0
- Proportions of cows (%)	3.6	4.3	13.5	16.7
100 ~ 199 head				
- Proportions of farms (%)	0.2	0.4	0.8	0.8
- Proportions of cows (%)	0.2	1.7	2.3	2.3
200 and over 200 head				
- Proportions of farms (%)	0.0	0.0	0.1	0.1
- Proportions of cows (%)	0.0	0.0	0.8	0.8

* Refers to the two cities of Seoul and Incheon, and Gyeonggi Province

Source: MAF and National Agriculture Products Quality Management Service, *Livestock Statistics*, various issues.

4. Prices of Dairy Cattle by Cattle Categories: 1990-2001

The prices of sprinter cow remained around or higher than 3 million won until the first quarter of 1996. However, the price began to decrease thereafter and fell to 1.4 million won in the

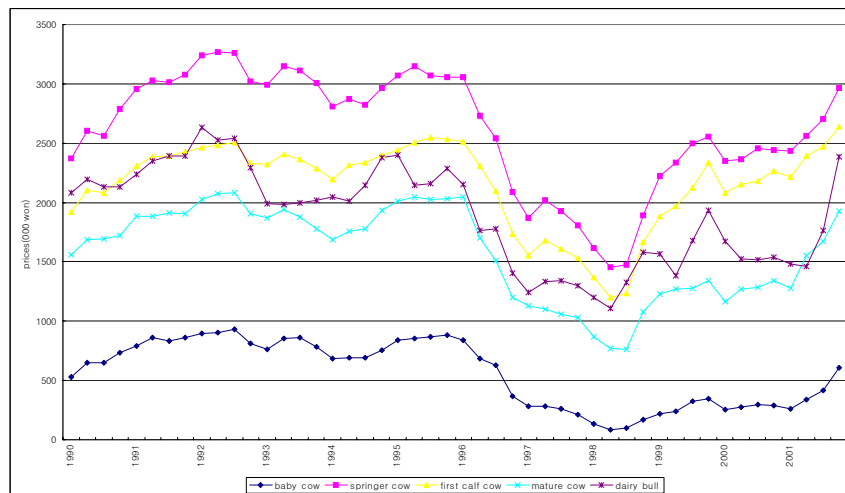
second quarter of 1998. The price of dairy calves had fluctuated within the range of 530,000 won to 932,000 won between the first quarter of 1990 and the second quarter of 1996. However, the price also started to decrease successively from the third quarter and thereafter, to the lowest of 84,000 won in the second quarter of 1998.

The prices for other categories of dairy cattle show similar trends as shown in Figure 1: their prices all fell to the lowest levels in the second quarter(cow with the 1st calf and dairy bull) or in the third quarter(the mature cow which produced two or more calves) of 1998.

The change in the prices for all categories of cattle starting the second quarter of 1996 is to blame for the market liberalization for all dairy products in July of 1996.

However, with the prospect of the recovery of the economy and more importantly, with the increase in the price of raw milk effective as of January 1, 1998 the prices of the dairy cattle were on the rise in late 1998. The price of sprinter cows

FIGURE 1. Dairy Cattle Prices, 1990-2001



Source: NACF(2002).

climbed to over 2.2 million won in the first quarter of 1999 and kept increasing afterwards, close to 3.0 million won in the late 2001. The prices for other dairy cattle also increased to the levels prevailed in the middle of 1996.

5. Change in Raw Milk Collection with Revision of the Dairy Industry Promotion Law

The tasks of raw milk collecting by a single authorized collector and a fair inspection for the raw milk were regarded as the two most urgent tasks to be tackled for the industry in order to enhance the competitiveness of the sector in the face of the market liberalization for dairy products (Yoo 1997). The purposes of raw milk collecting by a single authorized collector were, 1) to reduce the cost associated with collection of raw milk, 2) to streamline the collection of raw milk in an orderly way, which would also contribute to increased transparency in pricing for the raw milk. The high cost of collecting the raw milk resulted from competing for the limited amount of raw milk among milk processors: it was not surprising to find there were two or more milk processors vying to collect raw milk in a small village, where the raw milk available there was not enough to supply even one processor, resulting in added costs including for transportation. Associated problem arose from fierce competition among the raw milk processors for the acquisition of as much raw milk as possible from dairy farms, particularly in times of a short supply of the raw milk owing to a high demand for fresh milk, such as during intermittent periods in the early 1970s to the late 1980s. In these times, the milk processors often offered monetary incentives on top of the price set by the government. On the other hand, when there was an oversupply of milk with a slack demand for the fresh milk in the market, they would restrict the amount of the raw milk collected and withdraw financial incentives.

Along with these practices of raw milk collecting, the question of fairness of inspections for raw milk intermittently arose: there had been recurring doubts and complaints regarding results

of the inspections of raw milk (raw milk is inspected before collecting to check the sanitary conditions or bacteria counts, fat content, etc. They are deciding factors for the raw milk price that the dairy farmers receive). The processors have often been criticized for applying a rubber 'yardstick' depending on the milk market conditions : relaxed criteria in times of a tight supply of raw milk and high demand for drinking milk, and vice versa.

The government had prepared various measures to correct the problems mentioned above, even before the negotiations for the Uruguay Round Agreement on Agriculture which was signed in 1994. In order to ensure the implementation of these measures, preparations for the revision of the Dairy Industry Promotion Law were initiated as early in the mid-1980s. The law was revised in 1997. According to the revision, the Korea Dairy Committee (KDC) was established in 1999. Its main functions are 1) balancing the supply of and demand for milk through the collection of raw milk from dairy farmers and distribution to the end-users of dairy products including milk processors. 2) setting the price of raw milk price to be offered to dairy farmers based on a regular survey of the production cost of the raw milk. 3) promoting the consumption of milk. The other stipulation in the revision includes the inspection of raw milk by a government agency to guarantee fairness of the inspection (MAF 1999). The revised version was thought to contribute to reducing the cost of raw milk collection to some extent, attaining fairness in raw milk inspection, stabilizing the milk supply and demand, etc.

However, because independent collectors or processors were allowed to collect raw milk for their own use according to the revised law, some milk processors collected raw milk from the dairy farmers as before, instead of obtaining the raw milk supply from the KDC.⁷

⁷ The KDC has been regarded, or envisioned by the government to act an effective executioner of raw milk collecting by one collector and distributor of raw milk to the end- users of the dairy products. The KDC's share of raw milk collected reached 73 percent in May 2002. and the KDC has been providing raw milk to 18 milk processors out of 23

As a result, the agency has not been in a position to make price adjustments in response to an aggravated problem of high stock of powdered milk (Section 7), resulting in a high cost of managing the high stock problem of milk.⁸

6. Pricing of Raw Milk

Until 1998, the government had set the price of raw milk produced by the dairy farmers. Table 5 shows changes in the raw milk price between 1965 and 1998 in chronological order. The milk produced at farms was paid for at a uniform price for approved milk for collection for processing in terms of milk fat

TABLE 5. Change in Raw Milk Prices, 1965–2002

Year	Implemented period	Price per kg(won) ¹⁾	Premium for milk fat (won) ²⁾	% price increase over the previous price	References
1965	7. 1~'76.12.20	34			
1966	12.21~'67. 2.28	37			
1967	3. 1~'68. 3.31	43			
1968	4. 1~ 6.22	45			
1968	6.23~'70. 1.12	50			
1969	1. 1~'70. 1.12	50			
1970	1.13~'71. 8.14	55			
1971	8.15~ 12.31	60			
1972	1. 1~ 12.31	65			
1973	1. 1~ 7.10	67.5	1.15	3.8	○Premium paid by milk fat content
1973	7.11~'74. 4. 7	75	1.15	11.1	
1974	4. 8~ 12.17	90	1.15	20.0	
1974	12.18~'75.12.31	110	2.20	22.2	○Premium for milk fat applied up to milk fat 3.7%
1976	1. 1~'76.10.31	135	2.20	8.0	
1976	11. 1~ 12.31	150	2.20	11.1	
1977	1. 1~ 12.31	150	3.0	-	○Nationwide application of milk fat premium

_____ milk processors in the country.

⁸ The loss resulted mainly from the three sources. First, the cost of processing raw milk into powdered milk for storage. Second, the storage cost. Third, the price differentials between the price paid to the farmers and the price of powdered milk received from the end-users, which is, by and large, comparable to the import price of powdered milk.

Year	Implemented period	Price per kg(won) ¹⁾	Premium for milk fat (won) ²⁾	% price increase over the previous price	References
1978	1. 1~ 12.31	167	5.0	11.3	○Milk fat upper limit set at 3.8%
1979	2. 1~'79.12.10	209	6.0	25.1	
1979	12.11~'80. 2. 1	249	7.3	19.1	○Milk fat limit set at high 3.9% and low 2.8%
1980	2. 2~'81. 5.31	266	7.8	6.8	○Milk fat upper limit raised to 4.0%
1981	6. 1~'82. 3.31	307	7.8	15.4	○Milk fat low limit set at :3.0% and milk below the lower limit paid less 20 won per % below the cutoff
1982	4. 1~'85. 4.30	313	7.8	2.0	
1985	5. 1~'89. 3.31	322	9.4	2.9	
1989	4. 1~'91. 6.30	364	10.7	13.0	○Abolition of milk fat upper limit and below the lower limit paid less 23.5 won per % below the cutoff
1991	7. 1~'93. 5.31	383	11.0	5.2	○Below cutoff minus 26.5 won per %
1993	6. 1~	394	11.0	2.9	○Sanitary grading by bacteria count and somatic cell count started
1995	10.16~'96. 6.30	414	11.0	5.1	○Adjustment in the sanitary grading system
1996	7. 1~'97. 2.28	455	11.0	9.9	○Adjustment in the sanitary grading system
1997	3. 1~ 12.31	482.5	11.0	-	○Adjustment of somatic cell count
1998	1. 1~'02. 6.30	595	11.0	18.4	
2002	7. 1~	n.a. ³⁾	10.3 ⁴⁾	0.0	○Ceiling set for milk fat at 4.3% and strengthened penalty for milk fat under 3.0% ○Adjustment in the prices for sanitary grades(see Table 6) ○Change in the measure of raw milk from weight(kg) to volume (liter).

Note: 1) Average price.

2) The premium to be added to (or penalty deducted from) the baseline price of 3.4 % milk fat with 0.1 % increment of milk fat (or 0.1 % decrease).

3) Average premium received with the change in premium payment policy: Maximum premium 75 won set for 4.3% milk fat with the same milk fat baseline price for 3.4%, with varying premium of +5 or +10 per 0.1% increase in the milk fat. On the other hand, uniform 10 won penalty deducted per 0.1% of milk fat below the baseline milk fat price, and penalty for milk fat of below 3.0% set at -100 won.

→ See Table 12 for the price the dairy farmers received from the KDC.

Sources: 1) MAF and KDC(2002, 111).

2) KDC(2002).

(above 3.0 percent), gravity (above 1.028), and acidity (above 0.18). The price for the raw milk had successively been raised in accordance with the increased cost of milk production over time (third column).

Premium for the milk fat started to be paid for the first time in 1973 (fourth column) in order to encourage farmers to produce higher fat raw milk. At the time milk fat was regarded as the most important factor upgrading the quality of milk. There have since been numerous revisions as for pricing the milk fat content, along with changes in the basis price of the raw milk.

The sanitary grading system by the bacteria counts and somatic cell counts in the raw milk was first introduced in 1993 in order to encourage farmers to produce a 'cleaner' milk (Table 6). The cleanness of the raw milk or sanitary quality of milk is determined by both numbers of bacteria and somatic cells in the milk. The less, the cleaner. The number of bacteria is to be reduced with cleaner external milking situations in the milking work place by preparations such as using a clean towel for wiping cow teats before milking, etc. On the other hand, a high somatic cell count is associated with infection of the cow's internal milking gland, which would require veterinarian treatments. There were five grades by bacteria counts and four grades by somatic cell counts including cutoff grades for bacteria and somatic cell counts, when the system was first introduced.

Among the bacteria grades, the lower three grades were rewarded with bonuses of different amounts, based on the-fewer-the-higher the bonus paid and, the cutoff grade by bacteria counts of over 100 thousand/ml was charged a penalty of 11 won. On the other hand, as for the somatic cell counts, there were no rewards set for fewer somatic cell counts, and only the cutoff grade of over 750,000 somatic cell counts was penalized.

However, a rigorous bonus and penalty system to check high somatic cell counts was put into effect in July 1996 in the wake of the sanitary dispute of raw milk that started in October

TABLE 6. Raw Milk Sanitary Grades and Prices by Grades, 1993–2002

Effective date	Bacteria count/ml		Price differential (won)	Premium for milk fat 3.4% (won/kg)	Somatic cell count/ml		Price differential (won)	References
1993. 6. 1	1st grade	< ¹⁾ 100,000	+39	433	1st grade	< 250,000	0	○ Effective September 1, 1996, 11 won per kg deducted for raw milk with cutoff grade of bacteria counts plus one day suspension of raw milk sale for consecutive 3 cutoff grade milk produced farm.
	2nd grade	< 250,000	+16	410	2nd grade	< 500,000	0	
	3rd grade	< 500,000	+8	402	3rd grade	≤ 750,000	0	
	4th grade cutoff	≤ 1,000,000 > 1,000,000	0 -11	394 383	cutoff	> 750,000	-11	
1995.10.16	1st grade A	< 30,000	+52	466	1st grade	< 200,000	0	○ Effective January 1, 1994, 11 won per kg deducted for raw milk with cutoff grade of somatic cell counts. However, one day suspension of raw milk delivery with 3 consecutive cutoff grade somatic cell count raw milk has not yet been applied in practice.
	1st grade B	< 100,000	+41	455	2nd grade	< 400,000	0	
	2nd grade	< 250,000	+17	431	3rd grade	≤ 750,000	0	
	3rd grade	≤ 500,000	+9	423	cutoff	> 750,000	-11	
	4th grade cutoff	≤ 1,000,000 > 1,000,000	0 -31	414 383				
1996. 7. 1	1st grade A	< 30,000	+43	466	1st grade	< 200,000	+30	○ Price differentials between grades by bacteria counts
	1st grade B	< 100,000	+32	455	2nd grade	< 500,000	0	
	2nd grade	< 250,000	+8	431	3rd grade	≤ 600,000	-11	○ One day suspension of raw milk delivery for the 4th grade bacteria count milk producer for 3 consecutive days.
	3rd grade	≤ 500,000	0	423	4rd grade	> 600,000	-30	
	4th grade	> 500,000	-40	383				
1998. 1. 1	1st grade A	< 30,000	+51	553	1st grade	< 200,000	+30	○ Penalty for the 3rd grade somatic cell count raised.
	1st grade B	< 100,000	+38	540	2nd grade	≤ 500,000	0	
	2nd grade	< 250,000	+10	512	3rd grade	> 500,000	-60	
	3rd grade	≤ 500,000	0	502				
1998. 7. 1	"	"	"	"	"	"	-60	○ Penalty for the 3rd grade somatic cell count lowered.
1999.10. 1	"	"	"	"	"	"	-30	
2002. 7. 1	"	"	+51 +35 + 3 -15 -88		1st grade	< 200,000	+50	○ Adjustments for the bonuses and strengthened penalties. ○ Increases in both of number of grades and bonuses, and strengthened penalties.
					2nd grade	< 350,000	+23	
					3rd grade	< 500,000	+ 3	
					4th grade	≤ 750,000	-25	
					5th grade	> 750,000	-40	

Note: 1) Symbols show : <, less than ; ≤, less than or equal to ; >, more than

2) Symbol " indicates 'same as above'

Sources: 1) Seoul Dairy Milk Cooperative(1997, 818).

2) MAF and KDC(2002, 111).

1995.⁹ However, penalties for high somatic cell counts were

⁹ The raw milk sanitary dispute, or 'pus' milk dispute started in October 1995. The dispute over better treatment methods for raw milk for drinking that erupted between leaders of the industry developed into

relaxed in 1999 in response to criticism of the stringent criteria set for the top grade quality.

Since the sanitary grading system has been in place, the sanitary quality has been improved. In particular, the bacteria counts have been significantly reduced as shown in Table 7. At the time the policy started in June 1993, the proportion of the raw milk with bacteria counts of less than 100,000/ml (1st grade) to the total accounted for 26.7 percent. The 2001 tally shows that the proportion increased to 92.6 percent of the total raw milk examined. On the other hand, the proportion of the raw milk with somatic cell counts of less than 20,000/ml (1st grade) to the total decreased from 30.0 percent to 23.0 percent during the same period, showing efforts for the reduction of somatic cell counts had not been successful (Table 8). Compared with sanitary quality grade system with other selected countries, the ranges of bacteria counts and somatic cell counts set by Korea are less rigorous than other countries used for comparison (Table 9 and Table 10). The average somatic cell counts in the raw milk by countries (sixth column under somatic cell counts in Table 10) show the somatic cell counts in Korea were almost twice higher than those in the selected countries in the recent past. The situations have not improved significantly yet according to a recent survey (figures in the last row in Table 8, KDC 2002), indicating that Korea still has a long way to go to produce cleaner milk as in the other selected countries.

open verbal warfare, with them pointing fingers at each other, claiming the milk processed by other side was a mass of somatic cells or 'pus'. This incidence led to an abrupt decrease in the consumption of fresh milk, which lasted several months. In order to allay the consumer's aversion to the fresh drinking milk and to prepare a comprehensive plan for the strengthening the competitiveness of the industry in the face of impending all-out dairy market liberalization, the government organized an ad hoc committee to map out the strategy for a stable growth of the industry. One of the committee's recommendations was to reinforce the grading system more rigorously, by providing incentives, for the raw milk with fewer somatic cell counts and penalizing higher somatic cell counts (KREI 1996).

TABLE 7. Percentage Distributions of Bacteria Counts, 1993. 6.-2001

	1st grade(<1)102)) (%)		2nd grade (< 25) (%)	3rd grade (< 50) (%)	4th grade (≤ 100) (%)	cutoff (>100) (%)
1993.6	26.7		18.7	15.5	17.6	21.5
1993	44.7		20.5	13.1	12.3	9.6
1994	60.4		18.7	9.9	7.1	4.1
1995	66.1		17.7	7.8	5.3	3.1
↓	1st grade		< 25	≤ 50	< 50	abolished
	A (<3)	B (<10)				
1996	40.6	30.2	15.5	6.9	6.8	
1997	47.3	28.8	13.3	5.5	4.9	
1998	68.8	21.5	6.3	2.3	1.1	
1999	68.2	20.0	6.9	2.6	2.3	
2000	68.2	21.9	6.4	2.2	1.3	
2001	75.1	17.5	4.7	1.5	1.2	

Note: 1) Symbols show: <, less than ; ≤, less than or equal to ; >, more than; ≥, more than or equal to.

2) Bacteria counts (10,000/ml) of raw milk.

Sources: MAF and KDC(2002, 113).

TABLE 8. Percentage Distributions of Somatic Cell Counts, 1993. 6.-2002

	1st grade ($<1)202$) (%)	2nd grade (<40) (%)	3rd grade (≤ 75) (%)	cutoff (>75) (%)	
1993. 6	30.03	34.17	17.87	17.93	
1993	26.93	32.16	19.12	21.73	
1994	26.65	32.77	22.39	18.11	
1995. 10	20.00	40.00	75.00	75.00	
1995	23.28	33.81	25.18	17.72	
1996. 1~6	23.40	30.46	31.35	14.75	
1996. 7~12	1st grade (<20) 22.70	2nd grade (<50) 44.70	3rd grade (≤ 60) 97.50	4rd grade (>60) 22.70	
1997. 3	1st grade (<20) 24.4	2nd grade (≤ 50) 46.7	3rd grade (>50) 28.9	abolished -	
1998	18.7	48.5	32.7		
1999	21.1	50.7	28.2		
2000. 8	15.2	50.1	34.8		
	1st grade (<20)	2nd grade (≤ 35)	3rd grade (<50)	4th grade (≤ 75)	5th grade (>75)
2001 ³⁾	20.1	28.2	21.3	17.3	13.1
2002	23.0	32.0	20.9	14.9	9.2

Note: 1) Symbols show: $<$, less than; \leq , less than or equal to; $>$, more than; \geq , more than or equal to.

2) Somatic cell counts (10,000/ml) of raw milk.

3) Distributions for 2001 are constructed with a new grading by somatic cell counts for 2002

Sources: 1) MAF and KDC(2002, 168).

2) KDC(2002).

TABLE 9. Grades by Bacteria Counts in Selected Countries, 1998

Country	Bacteria Counts(count unit: 10,000/ml)					
	1st grade	2nd grade	3rd grade	4th grade	5th grade	cutoff and suspension of raw milk delivery
Japan	< 3	4 ~ 10	11 ~ 20	≥ 21	-	> 30
Denmark	< 3	3 ~ < 10	10 ~ < 30	> 30	-	> 40
UK	< 2	2 ~ < 10	> 10	-	-	> 20
Korea	A	10 ~ < 25	25 ~ ≤ 50	> 50	-	-
	B					
	< 3	< 10				

Note: Symbols show: <, less than; ≤, less than or equal to; >, more than; ≥, more than or equal to.
 Source: Cheong(2002, 14).

TABLE 10. Grades by Somatic Cell Counts in Selected Countries, 1998

Country	Somatic Cell Counts (count unit: 10,000/ml)					
	1st grade	2nd grade	3rd grade	4th grade	cutoff and suspension of raw milk delivery	Average somatic cell counts
Japan	< 30	30 ~ ≤ 50	> 50	-	> 100	28
Denmark	< 30	30 ~ < 40	40 ~ < 75	≥ 75	≥ 40	27
UK	< 40	40 ~ ≤ 50	50 ~ ≤ 100	≥ 100	-	27
Korea	< 20	20 ~ ≤ 50	> 50	-	-	48

Note: Symbols show: <, less than; ≤, less than or equal to; >, more than; ≥, more than or equal to.
 Source: Cheong(2000, 14).

7. Changes in the Dairy Policy in 2002

A few important reasons for the ongoing oversupply problem of

raw milk which prompted a change in the government policy are:

1) *Increased profitability following the high price for the raw milk:*¹⁰

The price for the raw milk was raised by 18.4 percent, in January 1998 (Table 5), in order to compensate for the increased price of commercial feeds caused by a drastic devaluation of the Korean currency during the financial crisis. However, the price of feeds had been decreased to the pre-financial crisis level with stabilized Korean currency and world grains market in 1998 and thereafter.¹¹ Other reasons for the increased milk supply include increased cow productivity due to improved cow raising conditions such as warm winter weather, the availability of quality roughage through imports from abroad, etc (KDC 2002). As a result, the stock of powdered milk reached over 16,000 tons by the end of March 2002, and further increased to 19,700 tons by the end of June 2002 (Table 11), far beyond an ‘optimal’ level of around 6,000 tons maintained during the 1990s.

TABLE 11. Stock of Powdered Milk as of June 2002

	Stock	Proportion of stock held by KDC (%)	Proportion of stock held by private companies(%)
Total stock (ton)	19,700	(35.3)	(64.7)
Skimmed milk powder (ton)	14,800	(26.1)	(73.9)
Whole milk powder (ton)	6,955	(63.1)	(36.9)

Source: Table 11 is reconstructed from Table 1 data in Cho(2002, 40).

¹⁰ The production cost of the raw milk was 446 won/kg in 2001 survey (MAF and NAPQMS 2002, 31). See Table 12 for the average price received for raw milk.

¹¹ The feed cost accounted for 49.3 % of the production cost of 446 won/kg in the milk production cost survey of 2001 (28.2 % for concentrated feeds and the other 21.1 % for roughage).

2) *Slow rate of dairy cow culling:*

Low productivity cows have been retained thanks to the improved relationship between the raw milk price and price of feeds. In addition, some dairy farmers are rumored to have tended to increase herd size to attain a higher quota in case the milk quota system is imposed in the near future.¹² As a result, even a subsidized culling scheme by the government has not been effective and the oversupply problem of raw milk has been aggravated.

3) *Stagnant consumption for drinking milk:*

The consumption has been stagnant or on the decline for several years (decreased to around 35 kg per capita in 2002). And the demand for imported dried milk and mixed milk by the domestic end-users has increased with the market liberalization for the dairy products (Table 2).

The government started to unveil a series of new dairy policies intended primarily to resolve the oversupply problem of raw milk in 2002. Earlier in the year, one policy in place was to get rid of some of cows by subsidizing slaughter of cows. However, the program was not successful because the dairy farmers intended to keep as many cows as possible with ongoing high profit from the cows.¹³

¹² In 1987 the government attempted to implement a national raw milk quota system to balance the national milk supply with demand. The milk quota for individual farms to produce and sell were to be allocated based on the herd size. With increased milk supply beyond demand in the recent past, the farmers tend to believe that the government would attempt a national quota system again through the KDC. The implementation of a national quota system (or called national raw milk production 'planning') as an effective measure has been openly recommended by some scholars in recent years. However, the publicized argument for the national raw milk production planning seems to have helped to reinforce the farmers' belief and contributing to the slow rate of culling of low productivity cows.

¹³ See footnote 12) for another reason for dairy farmers not responding to the subsidized slaughtering of milk cows.

Another policy announced in June was to change raw milk pricing effective July 1. The new pricing policy also targets satisfying changes in consumers' demand for lower fat milk and to enhance the sanitary quality of the milk. The main points include:

1) *Change in raw milk pricing:*

The KDC started to pay the raw milk according to the new pricing plan belatedly in October (Table 5 and Table 6), and introduced a 'differential pricing for surplus milk', paying a differentiated lower price for 'surplus' portion of raw milk

Table 12. Distributions of Dairy Herd Size, Daily Milk Collected and Average Price Received (KDC contract farms, 3rd and 4th week of July, 2002)

	Proportion of farms in the group to the total number of farms (=7,968), %	Proportion of milk collected from the group to the total milk collected (=67.4 tons/day), %	Milk collected per farm (liters/day)	Price received per liter (won)
Up to 100 liters	3.4	0.4	68	575
200	9.9	2.9	153	590
300	12.4	5.9	253	601
400	14.5	9.6	351	607
500	14.3	12.1	450	615
600	11.3	11.8	550	620
700	9.3	11.5	648	623
800	7.4	10.5	748	630
900	5.0	8.0	846	630
1,000	4.0	7.2	946	635
1,100	3.4	6.7	1,050	632
1,200	1.6	3.4	1,145	639
More than 1,200	3.5	10.0	1,523	633
Sum or average	100.0	100.0	529	622

Source: Table 12 is reconstructed from Table 3 data in Lee(2002, 5).

collected from a dairy farm.¹⁴ The criteria to be applied for the portion of the raw milk to fetch full price varies from one farm to another. The price beyond the portion also varies down to 200 won per liter, the level estimated to be competitive with the imported price of powdered milk. This price is less than one-third of the average price the dairy farmers received before the implementation of the new pricing scheme (622 won per liter in Table 12). A modified version of the differential pricing has been in place: the full price amount has been paid to small herd size farms which produce and sell up to 200 liters of raw milk a day (Table 12).¹⁵

2) Establishment of upper limits on the milk fat of raw milk:

The milk fat has been increased since the fat content was factored into the milk pricing in 1973 (Table 5). Currently, the proportion of the raw milk collected from the dairy farms with fat content of 4 percent or over is approaching 50 percent of all the raw milk collected for processing. Considering the normal fat content milked from the Holstein breed dairy cow is known to range 3.4~3.8 percent, the abnormally high fat drawn from the cow is judged to be overcharging the cow, resulting in a shorter economic life of the cow and a consequent economic loss for the farm. This trend is also against a change in the consumers' preferences: they seek food with lower fat content and balanced nutrients. In order to meet the change in consumers' increased

¹⁴ The KDC implemented the new pricing scheme belatedly with fierce dairy farmers' protests. They requested full 'normal price' to be paid for all raw milk they produced; with the differential pricing, the average price of raw milk per liter(roughly same as weight unit of kg) the dairy farmers to receive goes down.

¹⁵ The individual processors without contracts with the KDC for the supply of raw milk have been able to enforce varying pricing scheme of their own in response to the change in the demand for the fluid milk they are processing, earlier than the KDC. They established the milk quota for the individual farms based on the quantity of the raw milk they collected (such as last year) and 'normal' price (meaning the government-set price for the 'portion for drinking') for raw milk within the quota and varying prices over the quota.

concerns for lower fat food (Table 5 and note 3 under the table), the upper limit for the milk fat is set at 4.3 percent and no premium is to be paid for the milk fat beyond the limit.

3) Adjustment of sanitary grades:

The problem of a high somatic cell in the raw milk has not been abated significantly since the enforcement of the raw milk sanitary grading started in 1993. However, the enforcement contributed to a significant decrease in the bacteria counts in the raw milk (Table 7). The task of reducing the somatic cell counts is expected to take a long time to resolve (Table 8). A related problem is caused by pooling all the milk collected from individual dairy farms and increased possibility of proliferation of bacteria in the process of collecting and transporting, since the raw milk collected from individual farms is not differentiated by sanitary grades. However, the new grading system is expected to enhance the sanitary quality of the milk with strengthened criteria and penalties (Table 6).

III. Directions for Improvement

The current oversupply problem is to be overcome with a successive adjustment of the pricing for raw milk. Upgrading the quality of raw milk would also be accomplished by a change in the pricing for the raw milk. In this regard, some basic guidelines to follow for the implementation of the policy may be summarized as:

1) Strict Differential Pricing for Raw Milk:

The pricing regime for the raw milk should successively be revamped in order to accommodate the changing situation regarding the supply and demand for the milk products including drinking milk. Specifically, a differential pricing regime should be strictly implemented for the portion of the raw milk for processed dairy products. The scheme is in line with relevant economic theory: differential pricing involves paying for the raw material

varying prices equivalent to their marginal revenues to be generated from diverse products the raw material utilized. In the case of raw milk, there are two broad categories of products to produce from raw milk; drinking milk and other processed products such as dried milk and cheese. Marginal revenue from drinking milk is much higher than processed products, and the raw milk price for the portion projected to be disposed of for drinking milk is set higher than the portion for processed products. The price for the portion should be set at the level to be competitive with the price of imported dairy products. Considering the domestic milk processors process the oversupplied raw milk into dried milk, the price of imported dried milk could be used as an approximate for the representative price for all imported dairy products.

Also, the quality of milk in terms of nutritional and sanitary standards should be enhanced to attract consumers to consume more drinking milk. Realistically, the upgrading of raw milk quality is also to be attained by adjusting the prices for the raw milk. This involves a change in the pricing regime for raw milk, both for providing more incentive for quality grade raw milk and for penalizing low-grade raw milk.

a) Nutritional Quality:

Milk fat has been an important ingredient to take into account in the determination of the milk price. The higher fat content in raw milk, the higher prices the dairy farmers have been able to fetch. However, consumers are tending to consume less fatty food for health reasons, so lowering the fat content in milk should be encouraged. The change in the pricing system put into effect last October involves a 4 percent cap on the milk fat content, but the level of the cap should be further lowered. Instead, a price incentive for protein ingredients in raw milk should be established in the pricing system in the future.

b) Sanitary Quality:

The bacteria counts and somatic cell counts in the milk should be further lowered. In order to accomplish these purposes, the

number of grades should be increased or the current ranges of bacteria and somatic cell counts subdivided, or the grades should be readjusted by changing the ranges of bacteria and somatic cell counts. The penalty structure for raw milk with high bacteria or/and somatic cell counts is to be further reinforced and strengthened: charging a higher penalty, the suspension of collecting milk and hiking legal penalty fees.

2) Promotion for Increased Drinking Milk Consumption:

The consumption of drinking milk has been stagnant for several years, or even on the decline in recent years. The size of the market for drinking milk, on which the dairy farmers' future depends, would expand with increased promotional activities. With the expanded consumption of drinking milk, the proportion of the raw milk to fetch higher prices under the differential pricing scheme increases.

3) Strengthened Role of the KDC:

The role of the KDC is expected to become increasingly important, with increased uncertainty for the future of the Korean dairy industry in the era of dairy market liberalization. Among the functions the KDC will be required to perform, two functions will be increasingly important to carry out efficiently in the future. The first is to assume an active role in the promotional efforts for increased milk consumption, because the future of the dairy industry depends on the expanded size of the fresh drinking milk market. The second is to assume the role of a dependable safety net for the dairy farmers who may face difficulty in finding a reliable outlet for their raw milk production. It can be assumed that difficult situations may ensue in the future under the new pricing regime. With a differential pricing system for the raw milk initiated by the private milk processors, the private milk processors may be scaling down the amount of raw milk to accept from contract farmers, or stop accepting any for many reasons, including the sluggish domestic market, business loss, etc, leaving the dairy farmers who have supply contracts with the

private processors in a great trouble regarding the sale of their raw milk. Against this background, the KDC should reinforce its role as a safety net for the dairy farmers.

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