

PROBLEMS OF BEEF PRODUCTION AND MARKETING IN KOREA

YOO CHUL-HO*

I. Introduction

The Korean beef sector has been under considerable pressure in the GATT to open its market. Since 1989, a series of negotiations have taken place between Korea and beef exporting countries (the USA, Australia and New Zealand), based on the recommendations of the GATT dispute settlement panel report on Korean beef import restrictions and the report of the GATT BOP committee. A settlement of beef trade issues has been reached that will be in force through to 1997 : Korea will be obligated to eliminate its remaining import restrictions, or bring them into conformity with GATT provisions.

Korea started to import beef under a quota system in 1990. Beef quotas for 1990-1993 were set, and a "Simultaneous Buy and Sell (SBS)" system was introduced. The arrangement allows direct bidding between foreign suppliers and domestic buyers for an agreed proportion of the annual beef quota. In the recent quota accord for 1993-1995, Korea's beef import quota for 1993 was set at 99 thousand tons, 106 thousand tons for 1994 and 113 thousand tons for 1995. The 1993 beef quota represents a 50 percent increase over the 1992 quota. The amount of beef to be imported under SBS system, and the number of domestic buyers eligible to purchase beef under the system has also been expanded.

Research reports regarding the effects of a "complete" beef market liberalization indicate that the Korean beef sector would disappear in a matter of several years, due to weak price competitiveness (Huh and Lee, 1988 and Huh et al. 1991). The high cost of beef

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

production compared with world prices results from the weak structure of cattle production, and other reasons.

Most of the beef cattle are Korean native cattle, called Hanwoo. They had long been raised for use as a draft animal rather than source of meat. With the development of the farm machinery sector, Hanwoo is now raised to provide beef, and cattle fattening for this purpose is a widespread enterprise today. However, the majority of cattle farms remain small scale cow-calf farms, and cattle raising provides them with a good source of income. Cow-calf operations are low-cost enterprises utilizing resources available at farms with almost zero opportunity cost. Wild grass and by-products of crops, such as rice straw and bran are utilized as feeds, and elderly persons in the family provide labor for cattle care. As for most cow-calf farms the cash outlays for raising cattle are minimal. They are also major producers of calves which are sold to feedlot operators.

The cost of beef production could be substantially reduced, when the current bottleneck of calf supply is overcome with expanded cow-calf sector. The other potential method for enhancing the competitiveness of beef production is to produce high quality and high value Hanwoo beef. Currently, the price of Hanwoo beef is high in spite of massive beef imports.

In this regard, this paper deals with major issues associated with 1) problems in enhancing the competitiveness of the beef sector 2) development of government policies for import, domestic production and marketing of beef aimed at restructuring the sector.

II. Problems of Beef Production

1. Weak Structure of the Cattle Sector

The Korean livestock industry is characterized by small-scale operations. As of the end of 1992 there were 585 thousand farms raising beef cattle totalling 2,019 thousand. Beef cattle farms account for 36% of the total 1,640 thousand farms in Korea. Average herd size is 3.5 and farms with one or two herd accounts for 62%. The dairy sector also is a source of beef : 28 thousand farms were raising 508 thousand milk cows in 1992.

The beef sector has undergone significant fluctuations for the last two decades. The number of Hanwoo steadily increased, but remained less than two million before the early 1980s. The number recorded was over 2,553 thousand head in 1985, as a result of the rapid increase in cattle prices in 1982-83. The number then decreased to 1,622 thousand head in 1990. During the 1970-1975 period, Hanwoo farms increased from 1,102 thousand to 1,227 thousand and thereafter decreased gradually to 620 thousand in 1990.

In 1970 one or two head farms accounted for 98 percent of the total cattle farms. However, over the last two decades, the herd size has expanded at a very slow pace. Although there are not many farms of more than 10 head, the numbers are increasing, particularly since 1985(Table 1).

TABLE 1. Hanwoo Herd Size, and Distribution and Number of Hanwoo

Year	1970	1975	1980	1985	1990	1991	1992
Number of head (1000)	1,247	1,540	1,427	2,553	1,622	1,773	2,019
Total number of Hanwoo farms(1000)	1,102.3	1,276.8	997.0	1,047.5	620.0	585	581
1 or 2 head(%)	98.0	97.7	93.7	74.1	76.5	70.2	62.2
3 - 9 head(%)	1.9	2.2	5.9	23.7	19.7	25.1	31.6
10 head and more(%)	0.1	0.1	0.4	2.2	3.8	4.7	6.2
Average herd size	1.2	1.2	1.4	2.4	2.6	3.0	3.5

Source : Livestock Statistics, Ministry of Agriculture, Forestry and Fisheries, Government of Korea. 1993. 6

The number of dairy cows has increased from less than 24 thousand head to 508 thousand due to the increased demand for fresh milk and products during 1970-1992. In 1992 the number of dairy farms was 27,965.

2. High Cattle Production Costs

It is often cited that the beef price in Korea is 2.7~3 times higher than

"world market price". The high domestic beef price is caused by the high production cost. Production costs vary depending on the herd size, management ability, etc. According to the production cost survey of cattle in 1992, the "production cost" for a 499kg liveweight bull marketed for slaughter was estimated nearly 2,774 thousand won, or 3,520 US dollars. (The average number of days to reach that weight from a 3-4 month old calf was 413 days, a long-term fattening process. A breakdown of the production cost shows that calf purchase and feed are two main cost items : calf(53%), and the feed cost(21%) is mostly for commercial assorted feeds(NLCF, 1993). Deducting cash outlays from the sale value leaves the income per head, mostly a return for family labor. In the same year, the market price of the cattle per 400kg liveweight bull(reference cattle weight for trading) was 2, 403 thousand won(or 3,000 thousand Won for 499kg liveweight).

The current bottleneck of calf supply has often been blamed for 1) massive slaughter of cows to boost a prolonged sluggish cattle market in the late 1980s. 2) the uncertainty associated with the beef exporting countries pressure towards on the liberalization of Korean domestic market in recent years, and the Government policy of massive imports to stabilize consumer prices, and 3) the length of time required to build up cows for calving being at least 3 years. A recent survey shows that the number of cows slaughtered for meat has decreased due to continued high prices for the cattle and calves since 1988. The number of cattle started to increase slightly in 1990.

The implications for the development of Hanwoo industry are : 1) achievement of lower production cost through higher productivity and expanded herd size. 2) establishment of a collective cow-calf production system in order to reduce the cost of calf production, which constitutes the largest share of the beef production cost. 3) attainment of low input costs by collective purchase and distribution of farm inputs through producer cooperatives, and 4) establishment of expanded extension service systems in major livestock producing areas, and concentrating on improvement of cattle management techniques including feeding practices.

The high feed cost is a problem particular for cattle fattening. When cattle were raised as draft animals, most feeds were self-supplied at no additional cost. Still, the availability of self supplied feeds is the most restrictive factor for an individual cattle farm to

increase its herd size. Farm by-products include rice straw, and stalks available after the harvest of various crops, brans from rice and other grains and so forth. Fresh grass is also collected by family labor to act as a major cattle feed supplement during April to October. In the mountainous areas, wild grass is cut and dried in the fall season, and stored to feed cattle during winter.

As the Hanwoo was raised to provide beef rather than to use as a draft animal, commercial feeds have become increasingly used for feedlots. However, farm supplied feeds are still an important source of feeds for both Hanwoo cow-calf operators who raise a few cattle, and feedlot operators.

Increased production of pasture grass and forage crops has been recognized as a way to achieve low cost production of beef and dairy products along with full utilization of agriculture by-products. However the development of pasture land has been slow. The total area of pasture land in 1992 was 88,230 hectares, up from 45,283 hectares in 1980. The acreage of pasture land per beast is quite small. However, the area of land used for forage crops has steadily increased. Forage crops such as corn and rye are popular, and forage grass is produced in the cultivated land between the intervals of planting and harvesting of various crops. The production of forage crop in the paddy land after the harvest of rice provides another opportunity to utilize the land productively. The seeding starts after the harvest of rice in October, and forage crops continue up to May - June, when rice seedlings are planted for the moderate size of forage production. Most of the operations for the production of forage crops are performed by family labor and the cash outlays are modest for the purchase of seeds, fertilizer, etc. The acreage of forage crops in the upland was over 139,000 hectares in 1992, accounting for 18 percent of the total upland area of 756,000 hectares. In comparison, the forage crops produced from paddy land decreased to around 29,503 hectares in 1992 (2 percent of total paddy land of 1,335,000 hectares) after recording a peak acreage of over 86,000 hectares in 1987.

Cash expenses for commercial assorted feeds have increased due to limited supply of farm supplied feeds : feeding cattle assorted feeds in varying amounts has become a common feeding practice. Manufactured assorted feeds for beef cattle fattening were first introduced in 1972, and were followed by the production of feeds for

chicken, dairy cattle and swine. However, the production of the feeds for the beef cattle started to pick up with the higher prices for cattle in the early 1980s, and with the increased number of cattle thereafter. A assorted feed production for beef cattle recorded a peak of over 1,600 thousand metric tons to feed the largest number of beef cattle during the mid 1980s. However, feed production decreased commensurate with the sharply reduced number of cattle thereafter. With the continued high cattle prices since 1988, feed production has started to increase again. In 1992, the proportion of the feeds produced for the beef cattle to the total production of feeds increased to 19 percent of 12,695 thousand tons.

3. Cattle Price Instability and Problems in Beef Demand-Supply Adjustment

Price stabilization of cattle and beef has long been a prime policy target in relation to meat sources in Korea. The high price of cattle caused by the shortage of cattle for slaughter was followed by low prices with the subsequent herd expansion : an exhibited beef cycle of 5 years during 1960s-1970s. In spite of the cyclic fluctuation of cattle price during the period, domestic beef demand was met by domestic supply. However, with the increase in consumption of beef due to the rapid increase in income levels, beef imports became inevitable in the mid 1970s and thereafter.

Beginning with 694 metric tons of beef in 1976, Korea has imported considerable amount of beef thereafter. Beef import increased during 1981-1985, with 143,000 head of live cattle and 140,000 metric tons of beef being imported, accounting for over 26 percent of the annual beef consumption during that period. With the expansion of imported live cattle and beef, the number of domestic cattle sharply increased from 1.5 million head by the end of 1981 to a record-breaking 3 million head, including dairy cattle, in 1986. This caused a serious surplus problem resulting in a cattle price crash during 1983-1984. During the course of this situation, cattle farmers went bankrupt because of their debts, resulting in serious social problems.

The government intervened in the cattle market to stabilize cattle prices in various ways, but the policies were not effective. To alleviate the domestic over-supply problem of beef, two important price stabili-

zation policies were introduced : 1) abolition of the slaughtering age restriction of Hanwoo cows and 2) government purchase of live cattle. During 1984-1987, 281 thousand beef cows of 200-300kg liveweight were purchased and slaughtered. The abolition of the slaughtering age limit helped alleviate the over-supply problem but the latter has long been criticized for weakening the domestic beef production base to attain a higher level of self-sufficiency in beef.

The number of cattle and cattle raising farms started to decrease thereafter. The number of cattle steadily decreased to 1,486,000 head in March 1990, and then increased slightly. The bottoming out of the number of cattle can be attributed to the continued high price of the Hanwoo, and the cattle price recovered as a result of decreased cattle supply for slaughter. Offering freshness and a high quality of beef for consumers, the consumer price of Hanwoo beef has stayed high since 1988.

Total beef consumption remained around 100,000 metric tons until the early 1980s due to low incomes and the high price of beef. Beef consumption started to increase sharply with increases in income and lower retail prices during the sluggish cattle market period after 1983-1984 cattle price crash. In recent years, the total consumption of beef has increased drastically because of the massive imports of low priced beef (Table 2).

TABLE 2. Number and Price of Cattle and Beef Consumption by Year

	1979	1981	1983	1985	1986	1987	1988	1989	1990	1991	1992
Total number of	(1,000 head)										
Cattle	1,762	1,506	2,215	2,943	2,807	2,386	2,039	2,051	2,126	2,269	2,527
(Hanwoo)	(1,599)	(1,312)	(1,940)	(2,553)	(2,370)	(1,923)	(1,559)	(1,536)	(1,622)	(1,773)	(2,019)
Price 400kg	(1,000 won)										
Male	688	1,161	1,520	1,105	994	1,104	1,404	1,734	1,924	2,192	2,403
Beef	(1,000 M/T)										
consumption	113.8	93.2	115.5	120.3	147.9	152.0	141.5	144.5	180.6	223.2	226.9
(Imported											
Beef)	(27.3)	(23.9)	(49.4)	(4.7)	(3.6)	(0)	(9.3)	(54.5)	(85.8)	(124.7)	(127.3)

1) Korean currency : one US dollar is equivalent to 788 won in 1992.

Source : Materials on Price, Demand and Supply of Livestock Products 1993, National Livestock Cooperatives Federation(NLCF), Korea.

Per capita meat consumption including pork and chicken, more than doubled from 10.1kg in 1981 to 23.9kg in 1992. Over the same period beef consumption increased almost at the same rate as total meat consumption. However, the sharp increase in beef consumption in 1991-1992 was the result of a massive release of imported beef (Table 3).

TABLE 3. Per capita Income and Meat Consumption (1981-1990)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Per capita income(\$)	1,734	1,824	2,002	2,158	2,194	2,505	3,110	4,127	4,994	5,659	6,498	6,749
Beef(kg)	2.4	2.7	2.9	2.6	2.9	3.6	3.6	3.4	3.4	4.1	5.2	5.2
Pork(kg)	5.4	6.0	7.4	8.4	8.4	7.7	8.9	10.0	11.1	11.9	11.8	13.4
Chicken(kg)	2.3	2.5	3.0	2.9	3.1	3.1	3.3	3.5	3.7	4.0	4.8	5.3
Total(kg)	10.1	11.2	13.9	13.9	14.4	14.4	15.8	16.9	18.2	20.0	21.7	23.9

Source : Materials on Price, Demand and Supply of Livestock Products, 1993, NLCF, Korea.

With the liberalization of the consumer price for beef in January 1991, the Hanwoo beef price has steadily risen. However, no sharp increase in the number of cattle is expected in near future due to the uncertainty associated with increased beef imports and issues associated with the beef market liberalization. With the resumption of beef imports in 1988, the amount of imported beef has grown at an increasing rate. Consequently, the proportion of domestic supply to total beef consumption dropped below 50 percent in 1991 and 1992.

III. Beef Marketing

1. Marketing of Domestic Beef

Farmers can sell cattle through three channels : 1) Sale at the farmgate to merchants. The merchants go round from one place to another to buy cattle from farmers for resale (to farmers, other merchants or

butcher shop owners). 2) Sale at the local cattle markets or to the wholesale markets. Farmers bring cattle to the cattle markets for trade (sell or/and buy) or to the livestock products wholesale markets for sale as meat. The livestock products wholesale market is where cattle and hogs are slaughtered and auctioned. There are eleven livestock products wholesale markets in Korea. Nine of them are located in big cities (Seoul 3, Pusan 2, Incheon 1, and so on). One in Seoul, and two others, are operated by the National Livestock Cooperatives Federation(NLCF). The others are privately owned. The farmers and merchants consign the sale of their cattle to the wholesale market.

At the wholesale markets, the carcass is auctioned. Registered wholesale market agents participate in the auction at the requests of buyers. The highest price applicant is the successful bidder. This system is operated by the wholesale markets.

In the other slaughter houses, 154 in 1992, slaughtering is normally done on a fee basis for butcher shop owners or private meat suppliers catering to the large consumers : restaurants, company dining rooms, butcher shops, etc.. Meat suppliers usually purchase cattle at the local cattle markets according to orders from their customers specifying sex and approximate liveweight.

Farmers consigning the sale of cattle through the local livestock and agricultural cooperatives.

In 1992 there were approximately 44 thousand registered retail shops that sold meat products, including meat shops at department stores. In general, most of these stores, with the exception of department stores, sell very little in volume and the standard means of selling is either in frozen or fresh form. There is no vacuum packed market in Korea as chilled storage is limited. The Korean Federation of Meat Purveyors(KFMP) is the trade association of butcher shop owners : roughly three quarters of the total number of registered meat shops are run by KFMP members. Their sale volumes are very small : less than two carcasses per month(Yoo, 1993).

2. Beef Import and Distribution of Imported Beef

Prior to the resumption of beef imports in 1988, the Korean government encountered a dilemma at home and abroad. At home, there were furious protests by livestock farmers, and the National Assembly

strongly requested that beef imports should not be resumed. At the bilateral negotiations under GATT procedure in February 1988, the major beef exporting countries expressed their deep concern over resumption of the beef imports by the National Livestock Cooperatives Federation (NLCF), a producer group : a concern over a conflict of interests with producer group reinvolvement in beef imports.

Therefore, the Korean government had to compromise by reopening beef imports through a non-profit independent organization which was neither a producer nor a consumer group in order to alleviate the furious protests by farmers and also to accommodate the opinions of the major beef exporting countries.

The LPMO was established under Article 32 of the Civil Code, as a non profit organization. Administration of business related to beef imports is the most prominent function of the LPMO .

The Ministry of Agriculture, Forestry and Fisheries (MAFF) is responsible for the decision on annual beef import quantities. Specifically the Livestock Bureau of MAFF is involved in this process.

An adjustment of beef imports is made by the government based on a periodic assessment of the domestic beef supply including beef imports and general consumption. In this regard, the Economic Planning Board asks for the MAFF's cooperation for increased beef imports in order to stabilize domestic cattle prices and the general price level.

The LPMO determines the amount of beef imports by type (grain-fed carcass vs grass-fed carcass) and cuts (boxed, bondless, grain-fed) within the overall beef quota decided by the MAFF during a specified period. The LPMO purchases imported beef by means of the international open competition bidding system under the Foreign Trade Code and its Enforcement Ordinance.

The LPMO decides the daily release amount of imported beef based on an analysis of price changes of live cattle in cattle markets, and beef carcasses at meat wholesale markets. The LPMO receives various signals. They include wholesale and retail beef prices and quantities of carcasses traded at the meat wholesale markets, the number of cattle head at local cattle markets by sex and liveweight, and price of per Kg liveweight. Information on the price of livestock

products and cattle is available on daily basis. Estimates for the total demand for beef are based on various factors : consumers' income, retail prices of imported beef, prices of imported beef substitutes (particularly Hanwoo beef prices), seasonality in beef consumption in general and others. The past trends of consumption are also closely examined to determine future imports.

With the resumption of beef import, 14,239 metric tons of beef were imported in 1988, and 1989 purchases reached 50,000 metric tons. The 1990 import quota was initially set at 58,000 metric tons, bondless basis, based on beef agreements with supplying countries. However, as domestic beef prices continued to rise to record levels, the import quota was eventually raised to 84,000 metric tons (equivalent to 114,286 metric tons, carcass weight).

The USA has dominated the grainfed bondless category and Australia has dominated the grainfed carcass and grassfed carcass categories. In 1992, Australia supplied 51.5% of the total imports and the US supplied 40.3% with Canada and New Zealand covering the balance (Table 4).

3. Domestic Distribution of Imported Beef

The NLCF has the right for the domestic distribution of imported beef. The statutory grounds lie in the Livestock Industry Law and the Law Concerning Price Stabilization of Agro-Fishery(including livestock) Products and Marketing. These laws stipulate the Government's obligation to make comprehensive policies and programs for price stabilization of agro-fishery and livestock products (for consumers as well as producers), and delegation of the authority to pertinent organization(s) on a product group basis.

The statutory grounds have been rationalized for the several reasons. They include : firstly, the release of imported beef has a direct effect on prices of domestic cattle and other meat sources, and the NLCF, as producers organization, is responsible for the smooth adjustment of the imported beef supply to stabilize domestic cattle prices. Secondly, NLCF's regional member cooperatives provide nationwide beef distribution networks. Also the NLCF own cold storage warehouses throughout the country which are used for the storage of imported beef. Thirdly, the NLCF is also responsible for

TABLE 4.

Beef Imports by Countries. 1988 - 1992

												Boneless, M/T, US\$ 1,000		
1988			1989			1990			1991			1992		
	Grain -fed	grass -fed	Total	Grain -fed	grass -fed	Total	Grain -fed	grass -fed	Grain fed	grass -fed	Total	Grain -fed	grass -fed	Total
U.S.A	6,779	—	6,779	12,076	210	12,286	26,404	—	47,038	—	47,038	53,260	—	53,260
	(33,150)		(33,150)	(51,078)	(752)	(51,830)	(106,520)	—	(190,393)	—	(190,393)	(228,589)	—	(228,589)
Australia	80	7,135	7,215	6,502	26,658	33,161	10,474	38,860	20,716	43,742	64,458	20,445	47,584	68,029
	(286)	(24,102)	(24,338)	(26,768)	(92,261)	(119,029)	(40,013)	(132,091)	(73,549)	(138,755)	(212,304)	(70,036)	(140,442)	(210,4)
Canada	20	210	230	2,875	112	2,987	926	—	75	—	75	162	—	162
	(194)	(657)	(851)	(12,204)	(374)	(12,578)	(3,750)	—	(342)	—	(342)	(667)	—	(667)
New Zealand	15	—	15	—	1,548	1,548	—	3,336	82	13,347	13,429	65	10,483	10,548
	(110)	—	(110)	—	(5,491)	(5,491)	—	(11,288)	(509)	(42,318)	(42,827)	(485)	(31,729)	(32,214)
Total	6,894	7,345	14,239	21,454	28,528	49,982	37,804	42,196	67,920	57,080	125,000	73,933	58,067	132,000
	(33,704)	(24,759)	(58,499)	(90,050)	(98,878)	(188,928)	(150,283)	(143,379)	(264,879)	(180,988)	(445,867)	(299,777)	(172,171)	(471,948)

Note : Figures in parentheses indicate amount in US\$ 1,000.

Source : Ministry of Agriculture, Forestry and Fisheries, Korea.

the management of Livestock Development Fund accrued from the price difference between beef imports and domestic sale for the development of livestock industry by providing support for cattle farmers.

For domestic sales, imported beef goes largely through two different channels. Grassfed carcasses are all shipped to packaging plants operated by the NLCF and the Korea Cold Storage Company (KCSC). They are located in the major consuming areas. In addition to this, grain-fed beef is auctioned at meat wholesale markets or supplied to imported beef shops through the NLCF'S Provincial offices.

The NLCF decides on the quantity of beef allocated to the KCSC for the production of packaged beef. It is determined through consideration of the capacity of the processing facilities, the actual production and sales over a time interval, and marketing networks of the KCSC.

(1) Grass-fed Beef Packaging and Domestic Sales

The grass-fed carcasses are all packaged for retail sale. The NLCF and the KCSC use the same cut(S) to prepare a specified grade product. A group of cuts from a carcass constitutes a packaged product suited for preparing a specific Korean beef cuisine. The product range has been established by the NLCF and the KCSC from their past sale experiences of packaged beef. The reason for the practice is to give the least confusion to consumers about the contents of the product : the same price and weight for the same product from both packaged beef producers. After the boning and slicing process, the meat is cut into standard sale weights, 500g or 1kg, and placed on the tray and wrapped for general retailing. They are customarily classified into five grade products : special, high, medium, ordinary and beef ribs. They approximately conform to the beef usage for Korean beef cuisine.

The NLCF and the KCSC supply packaged beef to their designated sales agents and imported beef shops. They themselves engage in retailing to the consumers, or they supply packaged beef to the general merchandising retail stores (those that want to sell the beef), i.e. there is no restriction for retailing of the packaged beef.

(2) Grain-fed Beef Packaging and Domestic Sales

The NLCF and the KCSC started to produce grain-fed beef packages as part of their efforts to develop "new products" in 1990. The KCSC obtained the supply of grain-fed carcasses from the NLCF.

The range of cuts and products of packaged grain-fed beef are the same as the grassfed beef. The cost of processing grain-fed carcasses into packaged product is about the same as the cost for packaged grass-fed or a little higher due to the added labor cost for careful handling and higher quality trays and wrapping packaged grain-fed beef processing among the processing plants as in the case of packaged grass-fed beef.

(3) Wholesale Market Sale of Grain-fed Beef and Retailing

Grainfed beef is auctioned at livestock products wholesale markets. There are nine livestock products wholesale markets in major cities in Korea. The same regulations for auction apply for the NLCF and private markets. One, in Seoul, is managed by the NLCF and the other eight are privately operated. Imported beef shops purchase the beef through registered brokers at the wholesale markets. In Provinces without wholesale markets, beef is provided to imported beef shops through NLCF'S Provincial offices.

The auction starts with a sample display (in case the lots for the auction are different from the previous ones in respect of country of origin, cuts and grades). The wholesale market puts on notice, one hour before the opening of the auction, the specifications of the beef (by country of origin, grade and cut) and the awarded prices of the previous day. Agents at the wholesale market participate in the bidding on behalf of their customers (registered imported beef shops) with written applications for the offer price and the amount of beef to be purchased. Awarding of contracts is to the highest bidder for the specified items (by country of origin, grade and cut). The contracted boxed beef or grain-fed carcasses are delivered to the imported beef shops the following day from the cold storage warehouses of the NLCF.

Opening an imported beef shop requires registration to the local administrative office in the area. The minimum facilities required for the opening a shop are stipulated in the Food Sanitation Act and administered by the Ministry of Public Health and Social Affairs.

Registration with the livestock products wholesale market is also necessary in order to obtain grain-fed beef (bone-in and bondless boxed beef) auctioned at the wholesale meat market through sales agents. They are also registered with the wholesale markets. At the imported beef shops, the grain-fed carcass is boned, trimmed and sliced for retail sale. The job is done by the shop owner and/or employees. All grain-fed bondless beef is imported in boxes and the shops prepare the cuts customers want, or sell the product in boxes. The cuts from the boxed beef are displayed inside the cold show window or stored in refrigerators. When the customer orders, the shops prepare the cut(s) he/she wants to buy. However, not all the cut(s) are in boxes, and choices of cuts by customers are limited. In cases, where the shopkeeper purchases grainfed carcasses (from the wholesale market), the shopkeeper is able to provide all the cuts a consumer asks for.

4. Reasons for separating Distribution of Imported Beef

When beef imports resumed in 1988 grain-fed beef was released through meat wholesale markets and NLCF Provincial offices at predetermined prices, and supplied to the meat retail shops. However, in March 1, 1990, major changes to the imported beef distribution system occurred. They included : 1) sale of grain-fed beef by auction at the meat wholesale markets, 2) establishment of new retail outlets for imported beef shops, forbidding existing butcher shops to sell imported grain-fed beef (they can sell packaged beef, however), i.e. the butcher shops are allowed to deal with either domestically produced beef or imported beef, not both.

There are several reasons for the separation of the distribution channels including : firstly, it is difficult for consumers to distinguish low-priced imported grass-fed beef from Hanwoo beef, when they buy beef at butcher shops. It was alleged that the butcher shops took "unfair high profit" by selling imported beef as high-priced Hanwoo beef. The same practices were revealed later, even in the well-known department stores in Seoul. These incidents highlighted the need for separation of the distribution channels for imported grain-fed carcasses and grass-fed carcasses, hence the current system. Secondly, the measure is also regarded as necessary to give signals to the

Korean cattle farmers that as long as they produce quality beef, their products would not be unduly underpriced.

Separation of the distribution paths has contributed to the expansion of imported beef consumption (particularly low-priced packaged grass-fed beef) for low income consumers by selling at a substantially lower price, with a suggested price tag on the packages.

5. Pricing of Imported Beef

(1) Packaged Beef

Supplier's prices for packaged beef to sale agents and retail prices are fixed. The NLCF consults with the LPMO regarding the levels of packaged beef prices, and gets approval from MAFF. The prices are adjusted according to changes in domestically produced beef prices, imported beef price, packing costs, yield of cuts, and consumer preferences for specific grade products. No special ratios exist between the prices of domestic beef and imported beef. In general, the price of packaged beef is maintained at 50-60% of the Hanwoo price in order to stabilize beef prices.

(2) Grain-fed Beef

The retail price of grain-fed beef shops was fixed. In July 1990, however, the retail price of grain-fed beef was liberalized in line with the way the grain-fed beef prices are determined by the auction process at the meat wholesale markets, i.e., the retail price of grainfed beef is determined by shops themselves. It moves up and down freely by market mechanism. It ranges between (higher than) packaged grass-fed and (lower than) Hanwoo retail price for the same cut.

IV. Trend of Domestic Beef Production and Implications

Cattle prices are determined at the local livestock market, so are prices of carcasses at the wholesale markets. At the cattle markets and in the auction process at the wholesale markets, the prices for individual cattle and carcass are competitively decided according to several criteria potential buyers of cattle and the auctioneer, have developed through their "experiences". They include estimated bondless meat

yields, quality, sex, cattle breeds, etc. By and large, carcass of well fattened Korean native steers fetch the highest prices, and culled dairy cows the lowest.

The price of cattle and beef by stages of sale have been increasing. Cattle prices have slowly increased to 1.7 million Won in 1989, and 1.9 million Won(400kgs live-weight) in 1990 from the bottoming out of prices in 1986. The price of beef at the wholesale stage (Seoul areas) per kg of bone-in beef has also increased from 5,550 Won in 1988 to 6,629 Won in 1990. Data from a consumer price of beef survey in Seoul showed also a drastic markup at the retail stage due to increased operational expenses : high rental rates and wage rates, etc.

Examination of movements of carcass prices and beef prices at both wholesale and retail levels show that fluctuations of prices have also been contained in recent years.

Considering the massive imports of beef in recent years, the steady increases in cattle prices at local cattle markets and beef consumer prices indicate that the markets for domestically produced beef and imported beef are segregated to some extent. However, the results of consumer tests for the ability to distinguish differences in the "quality" of beef between or among the domestic beef and imported beef are not conclusive. It may be equally difficult to determine what hereditary traits of Hanwoo produce such quality beef for Korean consumers, particularly in the high income brackets willing to pay the high prices. Common characteristics of Hanwoo beef often cited, include "Hanwoo beef is chewy", the flavor while cooking and freshness, etc. Those qualities are presumed to come from feeds of various kinds, the process of cattle raising, hereditary traits, etc.

A proxy measure for the "revealed" consumer preference for Hanwoo beef for a specified cut, or on a carcass basis would be the price differential between Hanwoo beef and other beef . The order of carcass price level from high to low is: Hanwoo steer and bull, beef cattle (imported bred) including crossbred and fattened dairy cattle.

According to carcass price data by cattle breed at the wholesale markets in Seoul (Jan. 1985-Jan. 1991), the Hanwoo price is higher than the next highest quality carcass, beef cattle (Chalolais, Others and Crossbreeds) by 3-5percent, and the price differences have

increased since 1988. The prices of fattened dairy cattle and beef cattle have maintained similar levels. The price differences are great when compared among cattle breeds. The average prices of Hanwoo steers and bull were higher than that of the beef cattle by 6.3 percent in January 1988. However, the Hanwoo price continuously increased over time : the average Hanwoo price was higher than that of the beef cattle by 23.1% in January 1991. Both the highest price and average price of Hanwoo heifers and cows were under the highest and average prices for the beef cattle. However, the prices of Hanwoo heifers and cows have kept increasing over the prices of beef cattle since January 1988. Also, differences in average prices for the same category of beef have widened. The trend for prices of beef indicates that the prices of Hanwoo beef have increased over other categories of beef over time. Another development conducive to the promotion of Hanwoo beef is that new types of meat retail outlets have emerged in such places as department stores for high income customers. At the department store display of both of Hanwoo beef and imported beef by cuts are common within the same premises. They provide an opportunity for consumers to educate themselves about the differences between Hanwoo beef and imported beef. However, consumer awareness in general of the differences in the product quality is, by and large, low. It is expected that consumers ability to distinguish beef by origin, quality, etc. will be enhanced with increased beef consumption over time.

The number of local cattle markets and slaughterhouses has been decreasing due to a decrease in the number of cattle. The volume of trade at the local cattle markets is small and the slaughterhouses operate under half of their capacity. The trend is expected to continue due to an uncertainty surrounding the beef sector. However, the upgrading of outdated facilities for slaughtering and processing has progressed at a slow pace. Modernization of marketing facilities and increases in market efficiency are two of the central policy objectives. Several policy measures have been taken and aothers are planned. Government support for the establishment of packers is aimed at streamlining marketing of high quality meats with strict sanitary standards from the slaughterhouse stage to the retail outlets.

The introduction of a carcass grading system in 1992, on a trial basis, has facilitated a turning point in meat marketing by highlighting

the importance of quality meat to both consumers and cattle producers. When the system is implemented on a national basis in the near future, consumers will be protected by paying price for the meat which accord to objective product descriptions. Producers would be paid for the product by the quality of the meat they produce, thereby increasing their income. These government policies when successfully implemented successfully will greatly contribute to the expanded beef market (domestic and imported) by expanding the range of the choice for beef by objective product quality description (domestic vs imported, and by cuts).

V. Conclusions

The structure of the Korean beef cattle sector remains very weak and vulnerable to the market liberalization. Considering the majority of cattle farmers are small sized, and that marketing systems are outdated and inefficient, rapid expansion of lower priced beef imports or market liberalization would lead to the deprivation of a regular source of farm income and threaten the stability of rural life. Accordingly, the domestic beef market should be expanded in accordance with progress in the implementation of 1) programs for the livestock sector structural adjustment and 2) measures to compensate for the loss.

Efforts for saving in respect of major production factor costs need to continue. In order to increase the supply of calves at low cost, the programs of collective cow-calf farms should be expanded, thereby reducing the cost of calf purchase, which constitutes the largest share of Hanwoo production cost. Also, feedlot operations should be encouraged for small herd farms in order to achieve a substantial saving in beef production costs by integrated operations from calf production to cattle fattening. A substantial saving would also be made by collective purchase and distribution of various inputs through the cooperatives' channels. Extension services should be strengthened for cattle farm management, cattle care and feeding, prevention of cattle disease, etc. In order to minimize cash outlays for commercial mixed feeds, utilization of farm by-products as feeds should be enhanced and production of forage crops productive of idle

resources, such as land and rural labor, during the farm off-season needs to be encouraged. Also, technological development for enhancing the nutritional value of farm by-products should be encouraged.

Measures for successful segregation of the Hanwoo beef market should be implemented, thereby enhancing incentive for quality beef producers and protecting consumers willing to pay higher price for quality beef. They include increased investment in separated marketing channels, continued education for consumers, etc.

For a successful market segregation for Hanwoo beef, a considerable time frame would be required in order for 1) small livestock farmers to make a successful adjustment by staying in the enterprise and achieving increased efficiency in price, or switching their resources to other sectors of the economy. 2) livestock farmers to acquire know-how for producing quality Hanwoo beef 3) the ongoing Government policy of enhancing price-quality competitiveness, and for improving the quality Hanwoo beef marketing to take root. 4) consumers to increase their ability to distinguish meat quality and others.

REFERENCES

- Huh, S. H. and C. H. Lee 1988, *The Demand and Supply Forecasting of Beef by Import Policy Options*, The Korea Rural Economy Review, 11(1), (in Korean).
- Huh, S. H. and C. H. and Martin, M. V. 1991, "Trade Policy Induced Changes in the Level of Korea Beef Imports". *Journal of International Food and Agribusiness marketing* 3 (2) : 1 - 19.
- Livestock Industry Bureau 1992, *'92 Livestock Industry policy*. Ministry of Agriculture, Forestry and Fisheries, Government of Korea.
- Livestock Industry Bureau 1993, *Materials on Livestock Industry Policy*.
- National Livestock Cooperatives Federation 1993, *Report of Livestock Production Cost Survey of 1992 and other Statistics*, Seoul.
- Yoo, C. H. 1993, "Beef Marketing Problems and Policy Direction for Improvement." Seminar Proceedings on *A Future Policy Direction for Small Hanwoo Farmers*, National Agricultural Cooperatives Federation, Seoul.