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MARKETING IMPROVEMENT OF FRUITS AND VEGETABLES AT PRODUCING AREAS OF KOREA*

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I. Introduction

Marketing at producing areas includes various marketing activities and functions performed at producing areas. But it generally includes all marketing activities from the time farm produce leaves farm gate until it arrives at a wholesale market or other markets in the consuming area.

Marketing at producing areas is important for farmers in that it realizes their income. It is also important as a starting point of a marketing channel, affecting all stages of marketing. Therefore, unsuitable preparations at producing areas may cause inefficiency throughout the marketing channels thereafter.

In spite of the importance of marketing activities at producing areas, even such intrinsic functions as grading and packaging are implemented in urban areas or cities. This results in increased marketing costs, severe garbage problems at urban markets, and a decrease in farm income through the transfer of potential farmer's earnings from these works to urban workers.

In this context, this paper suggests measures for improving

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the marketing of farm produce (fresh fruit and vegetables) at producing areas. The next section will outline the overall marketing status by presenting the marketing channel, market information system, and the level of market development of farm produce in Korea. The third section describes the present problems of marketing farm produce at producing areas. The fourth section suggests measures for improving the marketing of farm produce at producing areas in Korea. The last section of this paper ends with summary and concluding comments.

II. Overview of Produce Marketing

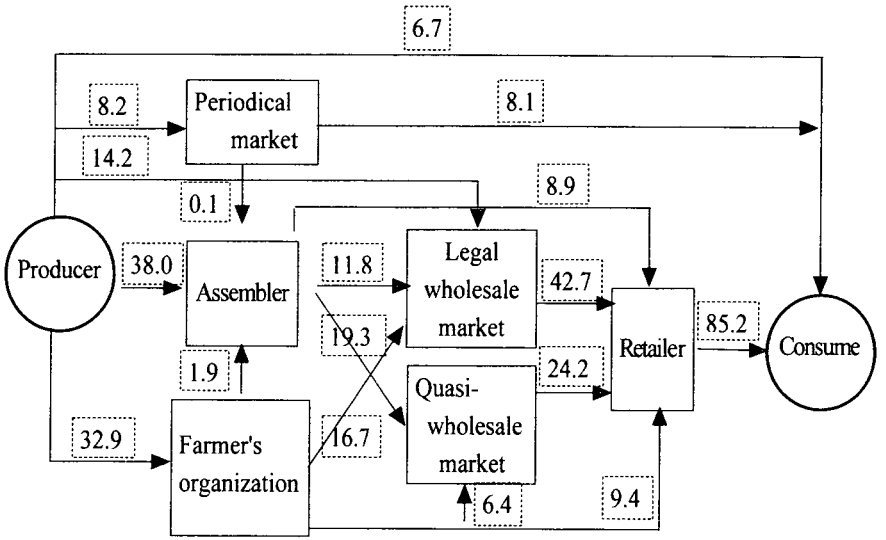
1. Marketing Channels and Estimated Market Shares by Channel

Farm produce is the second largest after rice and the fastest growing commodity group in Korean agriculture.[1] But its inefficient and complex marketing system has always been an important problem to be solved.

Marketing channels vary depending on the commodity, time, and region. Different agricultural products have different marketing channels. Figure 1 represents a simplified marketing channel with estimated market shares by channel for farm produce in Korea. Complete information on the volume of farm produce moving through each stage of each marketing channel is

[1] Per capita consumption of rice has declined 23.1 percent between 1970 and 1996 from 136.4 kg to 104.9 kg. In contrast, per capita consumption of produce has continued to increase. They become 3.9 times for fruit from 13.5 kg to 52.3 kg, and 2.5 times for vegetables from 59.9 kg to 152.2 kg during the same period.
In planting acreage, rice has declined 12.6 percent between 1970 and 1997 from 1,203 thousand ha to 1,052 thousand ha. In contrast, produce acreage has increased 69.8 percent from 318 thousand ha to 540 thousand ha during the same period.
Production indicates similar trends. Rice production has declined 11.4 percent from 6,937 thousand tons to 6,143 thousand tons, but produce has increased 331.1 percent from 3,076 thousand tons to 13,262 thousand tons during same period (Ministry of Agriculture and Forestry 1998).

FIGURE 1 Marketing Channel of Farm Produce in Korea, 1996



* Numbers in: diagram represent market shares in volume traded through each channel.
Source: Huh et al. (1997, 37).

not available. But it reflects the importance of each channel.

The main marketing channel of farm produce in Korea is "producer ⟶ assembler ⟶ wholesale markets ⟶ retailer ⟶ consumer". But the actual marketing channel is more complicated. For example, title sometimes changes hands a few times between assemblers at producing areas.

Farmers sell their produce mainly to wholesale markets. There are three types of major outlets: direct sale to wholesale markets themselves, sale through farmer's organization to wholesale markets, and sale to assemblers at producing areas. Farmers' organizations include agricultural cooperatives, farmers' joint marketing clubs,[2] and the farmers' joint firms.[3] Of the total

[2] The joint marketing club is a self-help organization of farmers who want

11.0 million tons of marketed produce,[4] the market shares in 1996 of the three types of outlets were 14.2%, 32.9%, 38.0%, respectively. Direct sale to consumers and sale at periodical markets occupy 14.9% of the total produce transacted.

There are three types of wholesale markets: public/legal wholesale markets,[5] cooperative marketing centers, and quasi-wholesale markets. The public/legal wholesale market and the cooperative marketing center are legal markets that receive permission from the government by law. But quasi-wholesale markets either receive government permission as a retail market or do not receive any permission, even if they function as wholesale markets.

The legal wholesale market is an auction market where shippers consign their produce to the wholesale company for sale on commission. Wholesale companies as a market operator sell usually by auction to a jobber/wholesaler. Quasi-wholesale market consists of many consignee/wholesalers. They sell produce consigned by shippers for sale on commission basis to retailers or secondary wholesalers through negotiation.

Of the total marketed volume of produce, 42.2% is marketed through legal wholesale markets: 32.5% through public wholesale markets, 3.6% through other legal wholesale markets, and 6.6% through cooperative marketing centers. Quasi-wholesale markets have maintained an important position until now, occupying 24.2% of the total market.

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to achieve a higher degree of efficiency in farm management through co-works, joint purchase of farm inputs, common use of facilities, and joint marketing. It generally consists of 20 to 50 members who cultivate the same crops in a village or field area.

[3] The purpose of the farmer's joint firm is similar to the joint marketing club. But it is an enterprise established by farmers through joint venture for efficient farming and marketing of products.

[4] It is estimated by applying the sale ratio to total production surveyed in 1996, 87.6% for vegetables and 93.3% for fruits respectively.

[5] The pubic/legal wholesale market is classified into public wholesale market and other legal wholesale market. The former is established and managed by the city government where the market is located. But the latter is established and operated by private companies after receiving permission from city government.

2. Market Information System

The key purpose of market information is to improve decision making of market participants such as farmers, processors, wholesalers, retailers, and institutional participants. Market information is essential for a smooth and efficiently operated marketing system. Accurate and timely market information facilitates marketing decisions, regulates the competitive market processes, and lubricates the marketing machinery. The role of market information is also important in the competitive market processes that regulate product flows and price in the food industry. Market information also contributes to operational efficiency in the food industry. Without the widespread availability of market information, buyers and sellers would need to devote considerably more time and money to market search activities than they currently do (Kohls and Uhl 1998, 280-281).

Considering the importance and the characteristics of public goods, the government generally supplies agricultural market information. The Ministry of Agricultural and Forestry (MAF) of the Korean government also operates the Agricultural, Fishery and Forestry Information System (AFFIS). AFFIS is a nationwide network specialzing in agricultural information since 1994, in order to efficiently supply various information to farmers and fishermen. The AFFIS collects various information through a network of 74 institutions, processes it to be used easily, and dissipates it through internet and related organizations including newspapers.

But marketing information for agricultural products is presently collected by individual institutions in accordance with their own procedures and needs. For example, wholesale market prices are collected, processed, and dissipated by the MAF, the National Agricultural Cooperatives Federation (NACF), the Agricultural and Fishery Marketing Corporation (AFMC), and the agricultural wholesale market management authorities. The NACF collects data from their cooperative marketing centers, the AFMC from public/legal wholesale markets, and the agricultural wholesale market management authorities from the public wholesale markets

they manage respectively. The agencies mentioned above also have their own information dissipation channels such as the internet, ARS (automatic response system), and organizational channel, even if all information are concentrated to the AFFIS. No data are however collected from quasi-wholesale markets.

Even though surveys on producing area prices, wholesale prices, and retail prices are carried out, the lack of standard criteria for sampling, such as size of product, times, places, and items to survey, makes comparison among prices surveyed almost impossible. Thus the value of the data may be diminished. The lack of a standard criterion for classification, packaging, and grading makes the maintenance of objectivity and validity of data difficult, and price comparison among products almost impossible (Sung 1996, 61). These factors make farmers and merchants avoid using the formal market information, and encourage them to depend on informal information.

To collect market information, leading farmers usually call auctioneers and/or consignment merchants at wholesale markets prior to selling their products. But other farmers depend mainly on their neighborhood leading farmers and assemblers in production areas, and usually follow their leading farmers on deciding times and places to sell their products.

Data on the marketing volume will no doubt be useful for market participants to make a correct market decision. Unfortunately, however, the existing information on agricultural marketing fails to provide the data on the volume of marketing, even if some institutions briefly report the market situations that include changes of throughput volumes.

3. Development Stage of Market

Blattberg and Glazer (1994, 10-11) classify the market development phase into five stages and characterize the role of marketing by each stage. Table 1 summarizes this.

Korean produce markets are considered to be in the Phase III of market development, that is, the stage where undifferentiated products are traded through centralized markets. This can be

compared to that of advanced western countries including the United States, where markets are transforming from Phase Ⅳ to Phase Ⅴ.

According to Blattberg and Glazer, Phase Ⅳ, Differentiated Products in Centralized Markets, is the situation in which the identification of heterogeneity in buyers' tastes leads to the development of "brand" or intracommodity (i.e., within a product category) competition and the generation of "secondary" demand. The last phase, Differentiated Products in Decentralized Markets, will be the consequence of the information revolution, in which the firm can identify individual buyers who continually provide it with information about their needs and preferences, thus enabling the firm to develop and provide for them.

In considering various marketing conditions, the produce market of Korea is anticipated to move into the next stage of market development, Phase Ⅳ, in the early middle of the next century unless there are any special motives to change. But the

TABLE 1 Role of Marketing in Phases of Market Development

Market Phase	Role of Marketing
I. Pre-Market Stage "Robinson Crusoe"	
II. Undifferentiated Products/ Decentralized Markets	Marketing identifies buyers and sellers
III. Undifferentiated Products/ Centralized Markets	Efficient distribution;price set by market; beginning of advertising - to generate awareness/ primary demand
IV. Differentiated Products/ Centralized Markets	Efficient distribution of specialized markets; target marketing based on customer needs; brand advertising
V. Differentiated Products/ Decentralized Markets	Shift from one-way communication to two-way; marketing manages information flows between firm and customers

Source: Blattberg and Glazer (1994, 10).

progress will mainly depend on the speed of standardization. The last Phase could come almost concurrently with Phase Ⅳ, considering the rapid evolution of the information revolution recently.

Ⅲ. Present Status and Bottlenecks

In Korea, the following points are major causes of inefficiency in the marketing of farm produce and thus contribute to higher marketing costs and margins.

1. Small-scale Production at Producing Area

The basic problem in produce marketing lies in the small scale of production at farm level. This results in small scale marketing operations and this is one of the most critical reasons for lower efficiency and higher costs of marketing.

According to the 1995 Agricultural Census, the average planted areas of vegetables are only 0.03～0.38 ha by crop, as shown in Table 2. For vegetables such as a radish and Chinese cabbage, approximately 95% of farm households harvest field areas below 0.1 ha and the average harvested acreage per farm is only 0.03～0.04 ha. While for onion, watermelon, and red pepper, the average harvested area is 0.1～0.4 ha. The average planted area of all fruits is 0.58ha, which is a little larger than that of vegetables (Table 3).[6]

Small-scale production makes the shipping scale small, increases marketing cost per unit, and deters product standardization. Thus small-scale farmers may enjoy scale economy by marketing their products jointly. Nevertheless, joint marketing is not activated in production areas.

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[6] There were 110 thousand fruit and vegetable firms and 9 million acres devoted to fruit and vegetable production in the US in 1992 (Kohls & Uhl 1998, 485). This averages to approximately 33.4 ha per farm (1 acre = 0.40806 ha).

Table 2 Number of Farm Households and Harvested Acreage of Vegetables by the Harvested Field Size, 1995

Unit: ha

Crop	No. of Farm Households by Harvested Field Size							Harvested Acreage	
	Below 0.1	0.1～0.2	0.2～0.3	0.3～0.5	0.5～0.7	Above 0.7	Total	Total	Per farm
Autumn Radish	687,513 (0.96)	10,660 (0.01)	2,943 (0.00)	5,622 (0.01)	2,039 (0.00)	4,105 (0.01)	712,882 (1.00)	23,310	0.03
Autumn Cabbage	737,973 (0.94)	22,612 (0.03)	7,321 (0.01)	10,690 (0.01)	3,501 (0.00)	3,810 (0.00)	785,907 (1.00)	29,915	0.04
Red Pepper	706,108 (0.75)	134,090 (0.14)	37,425 (0.04)	42,491 (0.05)	12,790 (0.01)	9,804 (0.01)	942,708 (1.00)	96,467	0.10
Garlic	472,410 (0.82)	50,514 (0.09)	17,973 (0.03)	22,116 (0.04)	6,693 (0.01)	4,538 (0.01)	574,244 (1.00)	44,811	0.08
Onion	51,415 (0.63)	12,649 (0.16)	5,751 (0.07)	7,436 (0.09)	2,348 (0.03)	1,670 (0.02)	81,269 (1.00)	10,852	0.13
Green Onion	140,104 (0.90)	7,434 (0.05)	2,680 (0.02)	3,596 (0.02)	1,165 (0.01)	1,453 (0.01)	156,432 (1.00)	8,575	0.05
Water Melon	17,510 (0.36)	7,926 (0.16)	4,965 (0.10)	8,377 (0.17)	3,629 (0.07)	6,196 (0.13)	48,603 (1.00)	18,581	0.38
Musk Melon	19,078 (0.77)	2,825 (0.11)	1,064 (0.04)	1,398 (0.06)	359 (0.01)	166 (0.01)	24,890 (1.00)	2,193	0.09

Note: Figures in the parentheses are the ratios of number of farm households.
Source: Ministry of Agriculture and Forestry (1996).

Table 3 Number of Farm Households Growing Fruit Trees and Their Acreage by Field Size, 1995

Unit : ha

Crop	No. of Farm Households by Field Size						Growing Acreage	
	Below 0.1	0.1 ~ 0.5	0.5 ~ 1.0	1.0 ~ 2.0	Above 2.0	Total	Total	Average
Apple	2,279 (0.03)	35,928 (0.50)	21,302 (0.30)	9,615 (0.13)	2,653 (0.04)	71,777 (1.00)	48,720	0.68
Pear	2,291 (0.09)	13,664 (0.55)	5,315 (0.21)	2,738 (0.11)	1,013 (0.04)	25,021 (1.00)	15,124	0.60
Peach	3,326 (0.13)	16,816 (0.67)	3,931 (0.16)	836 (0.03)	101 (0.00)	25,010 (1.00)	8,937	0.36
Grape	2,706 (0.06)	32,555 (0.67)	10,372 (0.21)	2,473 (0.05)	198 (0.00)	48,304 (1.00)	20,407	0.42
Sweet Persimmon	12,404 (0.28)	25,761 (0.57)	4,465 (0.10)	1,563 (0.03)	639 (0.01)	44,832 (1.00)	14,935	0.33
Orange	473 (0.02)	8,686 (0.34)	8,936 (0.35)	5,820 (0.23)	1,525 (0.06)	25,440 (1.00)	22,816	0.90
All fruits	25,548 (0.10)	131,883 (0.52)	60,236 (0.24)	27,730 (0.11)	7,338 (0.03)	252,735 (1.00)	145,413	0.58

Note: Figures in the parentheses are the ratios of number of farm households.
Source: Ministry of Agriculture and Forestry (1996).

2. Farmers' Outlets to Sale the Produce

Of the total 11.0 million tons of produce marketed, farmers sold 32.9% of their produce through joint marketing in 1996 (Figure 1). Despite the various measures to increase joint marketing through farmer's organizations, the results are not satisfactory and assemblers occupy the most important shares at producing areas. Moreover, the quality of joint marketing is low. Usually it comprises joint use of trucks only to save transportation costs without pooling products.

In addition, farmers often sell their produce to assemblers

at a loss due to asymmetric possession of market information and market power. Therefore, promotion of joint marketing through a farmer's organization is an important problem to be solved in order to increase marketing efficiency through scale economy and to strengthen farmer's market power to cope with assemblers and other merchants.

3. Standardization

Standardization includes the uniformity of grades and package size. The standardization of commodities can contribute to both operational and pricing efficiency. The use of uniform standard makes the sale of farm produce possible through sample or description and generates more accurate market information. This lowers searching and transaction costs of buyers and sellers and brings up efficient price discovery process. In addition, packaging decreases marketing costs through reducing rot and quality deterioration during marketing process. Further, packaging standardization can reduce physical handling costs through mechanization. Without standardization, moreover, improvement in marketing can not be achieved because such modern managerial techniques using electronics as POS (Point of Sales), CALS (Commerce at Light Speed), ECR (Effective Customer Response) cannot be introduced. Lack of standardization also makes introducing trading by description impossible,[7] which is considered prerequisite for market progress from Phase Ⅲ to Phase Ⅳ in the "Blattberg and Glazer Model" mentioned above.

Considering its importance, the promotion of produce standardization will be one of the most important policy issues in agricultural marketing in Korea. Therefore, the government has endeavored to elevate the level of standardization and achieved considerable performance, although more progress is needed.

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[7] Trading of commodities in the developed world is frequently done on the basis of description rather than by personal inspection of the items traded. The trading on description reduces trading costs greatly and promotes competition and pricing efficiency because both buyers and sellers can increase their area of search (Rhodes and Dauve 1998, 194).

Table 4 summarizes the percentage of agricultural products packaged in 1996 in Korea. The average packaging ratios for pulses and potatoes, fruits, and flowers are 89.2%, 90.3%, and 88.9%, respectively, and thus have reached a fairly high level. The average packaging ratios of vegetables and specialties are comparatively low at 42.9% and 41.8%, respectively. The most problematic items are radish and Chinese cabbage. They are bulky and are usually transacted without packaging.

The material used for packing has mostly changed from a wooden basket, a paper bag, a sack, or a wooden box into a corrugated box which is convenient and protective. But the sizes used differ according to producers and regions in spite of the government's efforts to promote standard size packing.

Grade standardization for agricultural products is more difficult to conduct than the packaging standardization. The level of grade standardization is therefore very low in Korea. According to an informal MAF data, only 18.9% of fruits and 9.4% of vegetables are marketed by the government recommended grade standards.

Table 4 Percentage of Agricultural Products Packaged, 1996

	Number of Respondents	Packing Ratio
Pulses and Potatoes	93 person	89.2%
Vegetables	1,141	42.9
Leafy & Roots	272	22.4
- Chinese cabbage	116	3.4
- Radish	61	3.3
Fruit	300	75.3
Seasoning	493	40.0
Fruits	382	90.3
Specialties	141	41.8
Flowers	18	88.9

Source: Huh et. al. (1997, 49).

In grading methods, farmers grade their produce individually by hand. Only 12.8% of the total produce marketed is graded at the farmer's organization packing facilities. 20.6% is graded using a sorting machine. This creates differences in quality even at the same grade among farmers.

The major causes delaying produce standardization are indicated; (1) small scale production unit of farming (refer to 3.1.), (2) labor shortage in the labor consuming works in rural areas due to rapid emigration, (3) lack of understanding among farmers about its importance, and (4) lack of price incentives to do grading in markets due to lack of buyers' understanding and willingness to pay premium for standardized produce (Huh and Cho 1995, 50-51).

Ⅳ. Suggestions for Improving Produce Marketing at Producing Areas

1. Facilitation of Standardization and Branding

As reviewed above, the degree of standardization will be a basic factor for produce market progress from Phase Ⅲ to Phase Ⅳ. Moreover, the imports of agricultural products have been increasing rapidly after launching the World Trade Organization. The highly standardized import products will press domestic producers to higher standardization.

In addition, due to the rapid increase of investment by foreign and domestic marketing firms, the recent trend in retail market is toward fewer and bigger chain supermarkets and they are replacing traditional mom and pop stores. Kim (2000) estimates that the market share of discount stores[8] will increase

[8] Discount stores include hyper-market and supercenter, membership wholesale club, and category killer. There were about 100 large scale discount stores which have over 500 pyung of selling areas at the end of 1999(1 pyung is about 3.3㎡). The number, average selling area, and market share are expected to increase rapidly during early 21st century (Kim, 2000, 42-43).

Table 5 Change of Market Shares by the Type of Retailer

Unit: %

Types	1998	2000	2003	2005
Department Store	8.4	8.3	8.2	8,2
Super Market	9.8	10.2	10.0	9.9
Discount Store	11.0	15.3	25.5	30.1
Traditional Mom & Pop Store	70.6	66.1	56.2	51.0
Total	100.0	100.0	100.0	100.0

Source: Kim (2000, 40).

from 11.0% in 1998 to 30.1% in 2005 by replacing the traditional mom and pop stores (Table 5). These trends are abreast with the change toward consumer oriented markets. The power structure of markets is shifting from producer or wholesaler subjective markets to retailer subjective ones. The results will be farmers' inability to sell their produce at markets unless they comply to retailers' strict quality, size standards and terms of trade.

On the other hand, branding is the leading factor of the Phase Ⅳ in the Blattberg and Glaze Model,[9] in which the identification of heterogeneity in buyers' tastes leads to the development of "brand". Branding also is the most important product strategy of food processors. It permits the food manufacturer to certify the quality of products, transfer the goodwill of the firm to new products, and otherwise differentiate the products from competitors' offerings. A well-known and trusted brand can earn the food processor brand loyalty(a consumer franchise) from consumers (Kohls and Uhl 1998, 80-81). In produce markets in Korea, the recent trends indicate that unbranded products will receive unfavorable treatments from consumers and retailers.

But it is difficult in the present situation to expect farmers to implement the standardization and branding of their products themselves because their farm operations are too small. Considering

[9] Brand is any name, sign, symbol or design used to identify the products of one firm and differentiate the products from those of competitors.

the importance, therefore, the standardization and branding (hereafter standardization) of produce have to be facilitated by the government together with farmers' own efforts. The following measures would be answers to facilitate standardization of produce at producing areas.

2. Specialization of Production and Formation of Main Producing Area

The small scale of farm operations is a structural problem for agricultural marketing as well as production in Korea. Despite the growing importance of standardization, it is almost impossible for individual farmers to follow through because of their small size and low understanding of its importance.

In many cases, there are 30 to 40 owners of a produce truck selling to wholesale markets. In this situation, grading becomes useless because each grade for a farmer will be less than a box and it is difficult to maintain quality consistency among farmers. The brand, even if introduced, cannot be identified by consumers due to the small volume and discontinuous sales. The scaling of marketing volume therefore is a prerequisite for the improvement of marketing operations. For the scaling of marketing volume in the limits of small farm operation, the specialization of production and the formation of main producing areas are needed.

If production moves from diversification to specialization, moreover, producers can be more market oriented. In addition, specialization of production can bring benefits such as productivity increase in production and marketing, rapid adoption of new technologies, easy access to specific market news, and increase of market countervailing power accompanying volume and increased market adaptabilities. The consequence is increased producers' competitiveness in markets since he can produce the products that buyers and consumers prefer.

When a main producing area is formed by coordinating crop production among farm producers, following benefits are expected: ① volume advantages for ease of consumer recognition,

product differentiation, and the accompanying market extension, ② costs reduction due to joint use of production and marketing facilities, ③ rapid adoption of new technology, ④ easy access to markets, and ⑤ increase of market countervailing power accompanying volume and increased market adaptabilities.

Therefore, the specialization of production and the formation of main producing areas are important measures to increase productivity, to reduce marketing and production costs, and to increase market countervailing power for small family farms in Korea facing the rapidly increasing imports of agricultural produce after opening the World Trade Organization.

For the specialization of production and formation of main producing area, the local government (*si* or *gun*) as a leading promoter has, at first, to select a few specializing crops for each township (*eup* or *myun*) in consideration of regional conditions after consulting with farm leaders and the specialists from agricultural cooperatives, *si/gun* extension offices, and colleges. The functions of local government in rural areas have to be intensified as a developer of regional agriculture as well as a promoter of production specialization and main producing area formation. Following that, various government supports to encourage production and to construct marketing facilities have to be focused on these crops.

But the most critical problem associated with specialization is the risk of price fluctuation. Unstable farm price leads farmers to produce diverse products. Therefore, the government program for price stabilization has to be intensified and focused on the selected crops in the main producing areas. But the government program has to conform to the UR Agreement on Agriculture, which regulates that domestic support policies for which exemption from the reduction commitments is claimed shall meet the fundamental requirement that they have no, or at most minimal, trade effects or effects on production and not have the effect of providing price support to producers. It also needs to build up such farmers' organization as farmers' joint marketing club, farmers' joint firm, as farmers' self-help organizations for joint marketing.

3. Increasing Investment in the Marketing Facilities and Improvement of Their Operations

For the standardization of produce, facilities are needed at producing areas to perform the work efficiently. The government at present subsidizes the construction of marketing facilities at producing area such as produce packing houses (shipping point operations in US), rice processing centers, and livestock processing centers at producing area in order to increase marketing efficiency. These facilities are expected to increase agricultural marketing efficiency drastically because all marketing functions needed are performed at the same complex.

Produce packing houses perform such functions as gathering, sorting and grading, cleaning, packaging, attaching labels and external expressions, cooling, selling, short term storage, supply of market information for farmers, and settlement of accounts among producers. Establishing packing houses will increase marketing efficiency of produce throughout the marketing channel by facilitating products standardization as well.

There were 99 operating packing houses in 1997,[10] of which 38 are medium size and 61 are small. It is estimated that up to 33 medium and 64 small size additional facilities will be needed by 2004 (Huh et al. 1997, 94-97). But this figures should be revised if the specialization of production and formation of main producing areas progresses more rapidly than expected.

A survey, however, indicates most packing houses operate at a loss.[11] The main factor of loss is low rate of operation due to seasonality of supply of raw produce for processing and difficulties in collection due to mono-cultural and small size of the main producing areas (Kang et al. 1997, 203). Lack of working funds and experience are other factors.

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[10] It increased to 112 operations in 1998 due mainly to the government support.

[11] According to a survey performed by the Agricultural and Fishery Marketing Corporation, 50 packing houses of 101 in operation did not function well in 1998.

In this context, local governments should induce main producing areas to be larger ones that can produce a few crops year around. In addition, the government supports should be extended to working funds as well as construction costs, considering that many packing house operators suffer from the seasonal demand of large amounts of working funds. These measures will lead the sound operation of packing houses.

On the other hand, the government has subsidized the construction of simple produce collection centers at the village level since 1994 to facilitate common transportation among small family farms. But the rates of use of this facilities are very low, reaching average annual use of 68.7 days (Kang 1997, 201). This is due to loss of intrinsic function because of increase of small truck owners in rural areas. Therefore, these facilities need to be transformed into small packing houses by adding sorting, cleaning, packing, cooling, and cold storage facilities in consideration of conditions.

4. Strengthening Farmers' Organizations

As mentioned above, it is difficult for small individual farmers to succeed in a rapidly changing market environment and to standardize and brand their products due to small sizes. Therefore, scaling of volume through cooperative marketing is required. For this purpose, sound agricultural cooperatives must be developed as major operators of comprehensive marketing facilities including packing houses, rice processing centers, and livestock processing centers. In addition, farmers' organizations such as farmers' joint marketing clubs and farmers' joint firms, which undertake joint marketing activities in the field as cooperatives' acting subsidiaries, must be strengthened.

As specialization of production progresses, the risk of price fluctuation will inevitably increase. Price stabilization through control of production and marketing volume by farmers themselves will therefore become more important. In addition, farmers should increase their market countervailing ability to confront the offensive large retailer firms, who are rapidly

moving toward fewer and bigger supermarkets and chain-stores and toward extending their market power to be retailer subjective markets in order to impose on producers their strict quality and size standards as well as terms of trade as mentioned.

In such changing circumstances, individual farmers do not have the power to confront the market. This makes a cooperative necessary. As it were, individual farmers can achieve orderly marketing and can confront large retail firms in transactions only through sound cooperatives.[12]

In this context, it is desirable for agricultural cooperatives to operate major marketing facilities such as packing houses. This will induce the producing area markets to become cooperatives subjective markets, even if private firms cannot be excluded in consideration of operational efficiency. For the agricultural cooperatives to perform such functions efficiently,[13] the following changes are required in the cooperative marketing system.

First, cooperatives' marketing business at producing area has to be transformed from businesses which simply help to sell produce and settle the payment for farmers into the businesses focused on adding value to farm produce. In this context, cooperative marketing centers at producing areas need to be transformed into packing houses in order to perform value added functions such as grading and packaging, and so on. Therefore, the present marketing strategies of agricultural cooperatives need to change emphasis from common transportation only, which uses vehicles together for

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[12] Orderly marketing means coordination of the total supply of a commodity over time, form, and spatial markets, in such a way as to achieve certain market objectives.

[13] The positive participation of farmers is essential for the successful cooperative marketing. This is because cooperatives cannot accomplish scale economy, which is a basic operational principle of cooperative, without participation of farmers. But cooperatives cannot induce farmers' positive participation in marketing business unless they can provide marketing services for farmers at lower prices than merchant competitors through efficient operation. Even if cooperatives can provide services at lower prices for a while through external support, they cannot continue their services for long without achieving operational efficiency.

saving the transportation costs without sorting and grading, to pooling of all produce, which includes joint sorting and grading, selling, and accounting. In order to introduce the pooling, however, strong solidarity among member farmers and farmers' trust to their cooperative are needed.

Second, cooperatives' marketing business at producing area has to improve operational efficiency through the introduction of a strict responsible management and incentives system. In this context, the decision-making right has to be transferred into the field workers as much as possible since marketing businesses need flexible and speedy decisions for success in confronting occasionally changing market conditions.

Third, the cooperative has to retain able and responsible marketing specialists for the successful cooperative marketing business. Three measures are suggested: (1) restrict frequent changes of marketing employees in order to retain specialists familiar to the region; (2) introduce a special promotion and allowance system for employees in marketing areas in order to balance work loads among employees, thus minimizing the phenomena among employees to avoid marketing positions; and (3) post marketing employees in the regions where they may maintain good personal relationships with farmers since marketing activities are directly connected to farmer's interests.

5. Vertical Integration of Production and Marketing Functions

The produce packing house has to be positioned in the near future as a core marketing facility in the producing area performing diverse and comprehensive marketing activities. Especially, it should function as shipping point operations to implement standardization for all produce marketed, as we can see in the US that all produce transacted pass through the shipping point operations (packing house) except for small amounts sold directly to consumers.[14]

[14] American farmers produced 67.8 billion pounds or $ 9.4 billion of produce in late 1980s. Of them, 96.3% (65.3 billion pounds) in volume or 95.7% ($ 9.0 billion initial value) in value was marketed through

In addition to standardization of produce, the packing houses should be a medium for small farmers to overcome the difficulties posed through vertical integration. In other words, the packing house can contract with farmers for production. They can specialize in their functions through contracting : farmers can devote to production of contracted produce while the packing house can concentrate on marketing. Through specialization, farmers can produce higher quality produce and sell it at higher prices with more profitable terms of trade through marketing specialists of the packing house. The packing house sells the produce after processing to wholesale markets, to contracted large retailers (especially super chains) or to retailer owned distribution centers.

The packing house will also need to operate a common seedling bed together for the supply of unified species and quality of seedlings to the contracted farmers and quality control of products in consideration of purchasers (especially large retailers) who demand for the supply of homogeneous products. It can also supply quality farm inputs through common purchase and new farming technologies in cooperation with the city/county extension offices to contracted farmers (Figure 2).

As mentioned above, however, the primary difficulty faced by most packing houses in operation is the deficit in management caused mainly by low rate of operation due to seasonality and difficulties in collection of raw produce for processing. Therefore, it is most important for packing houses to improve management through stable acquisition of produce for processing.

At present, most packing houses operate on the basis of commission charged to farmers who request sorting and packaging. But it is difficult for packing house to collect enough produce for processing through this method, in a situation when market conditions have not yet matured to pay premium high enough to compensate the costs for processing, and when the main producing

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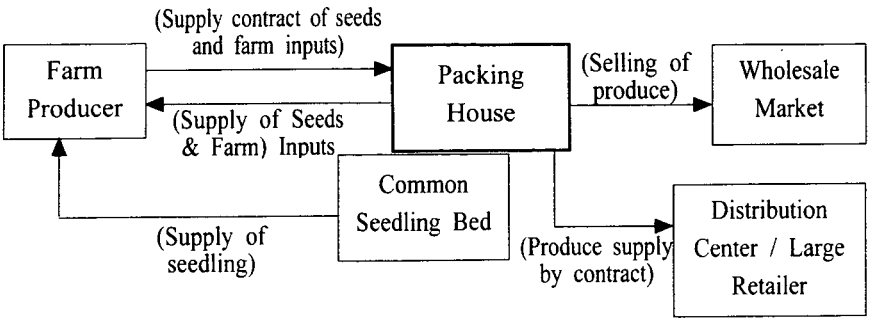
shipping point operations. Others were direct farm sales to consumers (How 1991, 78).

Figure 2. A Model of Vertical Integration by Packing House at Producing Area



areas are not formed to supply enough produce for processing within collectable boundaries. In addition, large quality gaps between farmers and unstable prices at markets restrict pooling and induce individual sales with consequent high marketing costs. A high degree of risk due to price fluctuations also restricts packing houses from contracting with farmers prior to harvest. Farmers are also accustomed to the spot market where a cash price is offered at the point of transaction. This makes them prefer the spot market to contract market. Therefore, it is difficult to make vertical integration by contracts[15] between packing house as integrator and farmers in the near future, even if it is desired.

In this context, packing house acquisition can progress through 3

[15] Kohls and Uhl (1998, 224-225) classify the types of contracts used into 3 types : market-specification terms, resource-providing terms, and management- and income- guaranteeing contracts.
Market-specification terms specify some of the product characteristics that will be acceptable to the integrator and usually establish the basis of payment to the producer. Resource-providing terms often specify certain production resources to be used and the place of their purchase. Management- and income-guaranteeing contracts often include the marketing and production stipulations of the above two types of contracts. In addition, they provide for the transferring of part or all of the market price and income risks from the producer to the integrator. This is usually done by paying the producer a prearranged return per unit of product or by guaranteeing against market-oriented financial loss.

stages: purchase at market price, acreage contract, and acreage and price contract.

In the present situation, it is most desirable for packing house to purchase produce at market price, and then to process and sell it at market price. Most successful packing houses in Korea are now operating in this way. In this case, packing houses can acquire enough produce for processing if it has the needed working funds. The major problems are aquisition of enough working funds and steady purchasers. Steady purchasers can be secured through contracts with large retailing firms and bulk consumers such as restaurants, hotels, hospitals, and institutional consumers, even if it depends mainly on director's ability. But working funds need to be supplied through government loans.

The second stage is the acreage contract stage. This stage is similar to the market-specification terms of Kohls and Uhl's types of contracts and can be advanced to resource-providing terms by supplying production resources by packing house. The producer receives minimal financial and technical helps.

Generally price and acreage are specified together in agricultural products contracts. But it is too risky for packing houses to contract purchasing price in advance, when the price is severely unstable. Moreover, agricultural cooperatives' packing houses could be criticized for engaging in speculative business. Therefore, it is desirable at the early vertical integration stage of packing house to contract with farmers on acreage only. The price is decided at the market and settled after sale by grade. Produce should be pooled. Little or none of the producer's price or income risk is assumed by the packing house, as returns are still fundamentally tied to the open market. This operational example can be seen at western agricultural cooperatives such as Sunkist.

But it will be difficult for farmers at the initial stage to accept this since farmers traditionally have fixed their income at the point of sale. But through continuous transactions, trust in the packing house can be built among farmers in a few years. This can naturally change farmers' attitudes and be linked to contracts

between farmers and the packing house, since contracts will bring the benefits of stable trade to both and be recognized for its benefits.

The third stage is the acreage and price contract stage. This contract includes prices to be paid as well as acreage to be sold. This stage is similar to Kohls and Uhl's management- and income-guaranteeing contracts. Contracts provide for the transfer of part or all of the price and income risks from the producer to the packing house. This is usually done by paying the producer a prearranged return per unit of product or by guaranteeing against market-oriented financial loss. In this contract, the integrator assumes a substantial part of the managerial responsibility of the producer. These contracts come closest to obtaining the managerial and financial control and risk that occurs when the integration is effected through complete ownership.

This stage can be realized when the packing house has made a lot of long term contracts with large retail firms and bulk consumers. The vertical integration trends of markets will change the market conditions, favoring long term contracts. The long term contracts will benefit farmers by providing stable markets and income and packing houses by guaranteeing stable supplies of produce for processing. The purchasers such as large retail firms will also benefit from stable acquisition of produce. This will be useful for establishing the marketing plans. When the long term contracts are generalized, moreover, it will contribute to price stabilization.

On the other hand, the following conditions must be satisfied for the packing house to succeed as an integrator : the packing house (1) must improve the abilities in management, finance, and leadership of farmers, (2) must secure sufficient stable markets, and (3) must acquire credibility from purchasers on the guality of supplying products. In addition, main producing areas must be formed early to supply enough produce year round.

In order for packing houses to possess management ability soon, government has to prepare a special training program for packing house managers and operate a standing counseling team

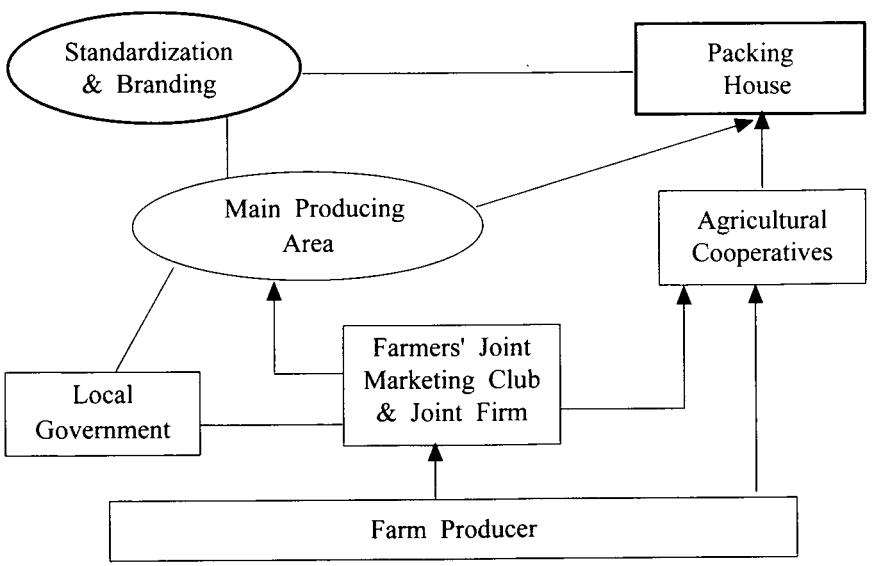
for immediate consultation on management problems.

6. Comprehensive Strategies to Improve Marketing at Producing Areas

Figure 3 is a comprehensive model for improving marketing at producing areas. That concentrates on a figure the measures explained above.

The most important objective to improve marketing at producing areas is standardization of farm products since standardization is essential to increase the efficiency of marketing. To facilitate standardization of produce, specialization in production, formation of main producing areas, and operation of packing houses are needed. For the specialization of production and formation of the main producing areas, sound farmers' organizations such as farmers' joint marketing club and farmers' joint firms have to be built up. In formation of the main producing areas, the positive support of the local governments is important. Agricultural cooperatives should function as operators of packing houses in

Figure 3 Comprehensive Model to Improve Marketing at Producing Areas



the support of farmers and farmers' organizations. The packing house as an integrator of producing area markets performs standardization of produce. The packing house has to be supported by the main producing areas for stable supply of raw materials for processing and for sound operation.

V. Summary and Conclusion

This paper suggests measures for improving the marketing of farm produce mainly at producing areas. For this purpose, the paper has reviewed the overall marketing status of farm produce and explained the present status of marketing of farm produce at producing areas while focusing on problems in Korea. On the basis of problems and market conditions, measures for improving the marketing of farm produce at producing areas in Korea are suggested.

The basic problem in produce marketing lies in the small scale of production. The small-scale production makes the small scale shipping, increases marketing cost per unit, and deters products standardization. This is the most critical factor contributing to low efficiency and higher costs of marketing. To overcome the problem of small-scale farming, farmers need joint marketing. Nevertheless, joint marketing is not activated at the shipping points due to the lack of farmers' recognition of cooperation and weakness of farmers' organizations.

Considering the importance of standardization in improving marketing efficiency, a low level of standardization is one of the most significant handicaps to improving the efficiency of produce marketing overall.

In relation to the problems, this paper suggests measures for improving farm produce marketing at producing areas. The most important thing to improve produce marketing is standardization of farm produce at producing areas since standardization is essential to increased efficiency of marketing

To facilitate standardization of produce and to increase marketing scale within the limits of a small farming operation,

farmers need specialization of production and formation of main producing areas. For the specialization of production and formation of main producing areas, sound farmers' organizations such as farmers' joint marketing club and farmers' joint firms have to be built up. In formation of main producing areas, the positive support of local governments is important.

For the standardization of produce, facilities are needed to perform the work efficiently at producing areas. Therefore, the government has to support the construction of packing houses at producing areas and the main producing areas have to be induced by local governments to be larger ones which can produce a few crops year around. In addition, government supports should be extended to working funds as well as construction costs.

Sound farmers' organizations are needed to increase marketing efficiency and market countervailing ability of producers. For this purpose, sound agricultural cooperatives have to be built up as a packing house operator. It also needs to build up farmers' organizations such as farmers' joint marketing club and farmers' joint firm as cooperatives' acting subsidiaries to perform join marketing activities in the fields.

The produce packing house has to be positioned in the near future as a core marketing facility and as an integrator of marketing functions at producing areas. The packing house needs to contract with farmers for stable supply of produce for processing and with large retail firms and bulk consumers to secure steady purchasers of produce. It will also need to operate a common seedling bed to supply quality and uniform species and seedlings to contracted farmers and to control quality in consideration of purchasers' demand for the supply of homogeneous products. Finally, the packing house needs also to supply quality farm inputs by common purchase and new farming technologies to contracted farmers.

But most packing houses are now facing difficulties in operation mainly due to seasonality and difficulties in collection of the raw produce for processing. It is difficult for the packing house to collect enough produce for processing, in a situation

when market conditions have not yet matured to pay premium high enough to compensate the costs of processing. Further, main producing areas are not formed enough to supply produce for processing within collectable boundaries. In addition, large quality gaps between farmers and unstable prices restrict product pooling. And the high degree of risk caused by price fluctuation limits packing houses' ability to contract with farmers prior to harvest. Therefore, it will be difficult for packing house to carry out vertical integration by contracts with farmers in the near future.

In this context, it is suggested that packing houses follow 3 stages of progress for produce acquisition : purchase at market price, acreage contract, and acreage and price contract stage. Furthermore, the following conditions have to be satisfied for the packing house to succeed as an integrator at producing areas : the packing house (1) must improve the abilities in management, finance, and leadership of farmers, (2) must secure enough stable markets, and (3) must acquire credibility from purchasers on the quality of products supplied. In order to make the packing house possess management ability soon, government has to prepare a special training program for packing house managers and operate a standing counseling team for immediate consultation on management problems. These suggestions are summarized in Figure 3.

The measures suggested in this paper are basic and comprehensive approaches. More detailed measures must be studied for application in real markets. But the problem of marketing is not limited to marketing itself.[16] It must be approached comprehensively along with problems related to production. New approaches are needed.

[16] How, R. Brian says "Marketing is just one part of the total production process (How 1991, 253)."

REFERENCES

Ministry of Agriculture and Forestry. 1996. *1995 Agricultural Census*, Kwachon, Korea.

Ministry of Agriculture and Forestry. 1998. *Major Statistics of Agriculture and Forestry*, Kwachon, Korea.

Blattberg, Robert C. and Rashi Glazer. 1994. "Marketing in the Information Revolution." *The Marketing Information Revolution*. Blattberg, Robert C. (ed.). Harvard Business School Press, Massachusetts, USA.

How, R. Brian. 1991. *Marketing Fresh Fruits and Vegetables*. Van Nostrand Reinhold, NY, USA.

Huh, G.H. et al. 1997. *New National Agricultural Marketing Master Plan Study in Face of 21 Century*. Korea Rural Economic Institute, Seoul, Korea.

Huh, G.H. and M.G. Cho. 1995. *A Study on Improvement of Wholesale Market Operating System in Order to Facilitate the Standardization of Agricultural Products*. Korea Rural Economic Institute, Seoul, Korea.

Huh, G.H. and Y.S. Lee. 1997. "Agricultural Marketing and Policy Issues in Korea: Trends and Prospect." *Journal of Rural Development* 20(2). Korea Rural Economic Institute, Seoul, Korea.

Kang, J.I. et al. 1997. *Intermediate Evaluation Report for the Secondary Agricultural and Forestry Development Program of Government*. Korea Rural Economic Institute, Seoul, Korea.

Kim, D.H. 2000. "Changes of and Counter-Measures for Consuming Area Food Markets in the 21st Century." *New Food Marketing Systems in the 21st Century: Prospects and their Measures*, symposium paper. New Food Marketing System Research Association, Seoul Korea.

Kohls, L. Richard and Joseph N. Uhl. 1998. *Marketing of Agricultural Products*. 8th ed. Prentice Hall, NJ, USA.

Rhodes, V. James and Jan L. Dauve. 1998. *The Agricultural Marketing System*. 5th ed. Holcomb Hathaway, Publisher, Scottsdale, AR, USA.

Sung, Bai-Yung. 1996. "Korean Agricultural Marketing System." *Agricultural Policy Issues in Korea*, Ministry of Agriculture, Forestry and Fisheries, Korea Rural Economic Institute.