Agricultural cooperatives’ pooling operations to improve marketing efficiency in Korea

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1. Introduction

- **Agricultural market in Korea has significantly changed since the mid-1990s.**
  - Due to URAA and FTAs, imports of agricultural products increased by about 260% from 1995 to 2014.
  - Since the-early 2000s, a few large supermarkets’ market power has been increasing.

- **Farmers have difficulty in overcoming these changes individually in the agricultural market.**

- **Thus, role of agricultural cooperatives is becoming more important.**
1. Introduction

- Agricultural cooperatives’ pooling contributes to an increase in farmers’ economic benefits.
  - Cooperative-specialized marketing practice, including collecting, grading, packing, distributing, and paying on a group basis
  - Increase in bargaining power against large scale supermarkets
  - Reduction of marketing costs from collection to final sale
  - Contribution to higher price on raw product delivered by farmers

- Objective of this paper is to introduce cooperative pooling cases in Korea
  - Reviews advantages of pooling in terms of marketing efficiency
  - Overviews recent efforts to activate the pooling operations in Korea
  - Derives major factors for successful pooling operations
  - Then, conclusions and implications are provided.
2. Advantages of agricultural cooperative’s pooling

- Characteristics of agricultural market
  - A large number of small scale farmers, a few large scale buyers
  - Farmers are much weaker than buyers in terms of market power.
  - Farmers usually receive lower price in the market than in competitive market.

- Effects of cooperative’s pooling operations
  1. Strong pooling system → purchasing competition of buyers → balancing cooperative’s market power with buyers → higher market efficiency → higher price on raw product delivered by farmers
  2. Strong pooling system → improve efficiency of marketing-cost structure, by economies of scale and reduction of per unit of marketing cost → higher price on raw product delivered by farmers (Fig. 1 & 2)
2. Advantages of agricultural cooperative’s pooling

(Fig. 1) Effects of cooperative’s pooling in terms of ‘economies of scale’

(Fig. 2) Effects of cooperative’s pooling in terms of marketing-cost reduction
3. Cases of agricultural cooperative’s pooling in Korea

3-1. Overview

☐ In general, member-farmers have no obligation to deliver raw product to their cooperatives in Korea.

- Thus, cooperative’s pooling scale is not sufficiently large.

☐ A number of local agricultural cooperatives have voluntarily established product-specific pooling organizations.

- They are operated by marketing agreements between member-farmers and cooperative.
- Usually, a local cooperative operates pooling organizations for more than one product.
  (Ex.) A cooperative operates grape, peach, and potato pooling organizations.
- In 2014, 1,900 pooling organizations are being operated nationwide in Korea.
- Sales of the pooling organizations increased by 178% from 2009 to 2014. (Fig. 3)
3. Cases of agricultural cooperative’s pooling in Korea

3-1. Overview

(Fig. 3) Sales of pooling organizations in Korea from 2009~2014
3. Cases of agricultural cooperative’s pooling in Korea

3-2. Major factors in successful pooling cases

<Operation of binding marketing agreement>

☐ Marketing agreement between cooperative and farmers is important.
  - The agreement includes rights, duties, and responsibilities of both parties.

☐ Agricultural cooperatives that operate pooling organizations usually make the marketing agreement.

☐ Based on the agreement, farmers deliver all or part of their products.
  - Farmers cultivate a specific variety of a product.
  - Farmers complete a study course for quality management.

☐ Cooperative, also according to the agreement, instructs members’ farming activities.
  - Variety choice, time control of sowing and harvesting, cultivation techniques, etc.
3. Cases of agricultural cooperative’s pooling in Korea

3-2. Major factors in successful pooling cases

<Operation of binding marketing agreement>

☐ Agreement usually set a penalty, to be applied if farmers violate the rules, especially pertaining to volume of delivery and criteria of quality
  - In many cases, if a farmer does violate the rules, he is dismissed from pooling organization directly or after a warning depending upon the marketing agreement.

☐ Example of a local agricultural cooperative
  - In 2011, about 60 percent of farmers who belonged to a grape pooling organization violated a delivery rule by selling their grape to other merchants.
  - The pooling organization held a general meeting and decided to disband itself.
  - Then, the organization was newly established with the condition that if a farmer violates the rule even at one time, he is dismissed without any warning.
  - Since then, the pooling organization has seen no violations of its rules.
3. Cases of agricultural cooperative’s pooling in Korea

3-2. Major factors in successful pooling cases

*<Strengthening quality management>*

- Providing good-quality products consistently with consideration of consumers’ preferences is important for successful marketing.

- In successful cases, the pooling organizations tries to manage quality of products throughout all pooling stages, from cultivation to delivery.
  - Cultivation stage: cooperative instructs farmers to unify a variety of products, agricultural supplies, and cultivation techniques.
  - After harvest: cooperative grades farmers’ products following the selection standards including size, appearance, color, sugar content, etc.
  - Grading is conducted in a marketing facility and any farmer is prohibited from being involved in the process of grading for fairness.
  - After grading, the products that do not satisfy the selection standards are sold separately, being excluded from the pooled products.
3. Cases of agricultural cooperative’s pooling in Korea

3-2. Major factors in successful pooling cases

<Strengthening quality management>

**Example: quality management process of a local agricultural cooperative**

1. Stage 1: Inspection in cultivation area
2. Stage 2: Inspection if harvest timing is appropriate
3. Stage 3: Inspection when raw products are delivered to marketing facility
4. Stage 4: Grading the collected products in marketing facility
5. Stage 5: Final inspection including packing status
3. Cases of agricultural cooperative’s pooling in Korea

3-2. Major factors in successful pooling cases

<Fair pool-based payment to farmers>

- Fair payment is a critical factor for successful pooling operations.
  - It prevents free-riders and increases the participation of better farmers in terms of product quality.

- Successful cooperatives in the pooling operations emphasize fair payment.
  - In many cases, an incentive is paid to farmers who delivered higher-quality products.
  - This is facilitated by member-farmers’ consensus.
  - The incentive-payment would be useful for overall quality enhancement of raw products, encouraging farmers to strive for quality management.
<Example>

**Incentive payment applying scores by grades in a pepper-pooling organization**

Suppose the deliveries of three member-farmers, A, B, and C. Each farmer delivers 13 boxes by grades, which are best, good, and usual.

<table>
<thead>
<tr>
<th></th>
<th>Farmer A</th>
<th></th>
<th>Farmer B</th>
<th></th>
<th>Farmer C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best</td>
<td>Good</td>
<td>Usual</td>
<td>Best</td>
<td>Good</td>
<td>Usual</td>
</tr>
<tr>
<td>Best</td>
<td>11</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Good</td>
<td>8</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Usual</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Assume the scores by grades are 100 for best, 70 for good, and 40 for usual, respectively. Then the scores by farmers are as follows:

<table>
<thead>
<tr>
<th>Grades</th>
<th>Farmer A</th>
<th>Farmer B</th>
<th>Farmer C</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best</td>
<td>11boxes×100 = 1,100</td>
<td>8boxes×100 = 800</td>
<td>6boxes×100 = 600</td>
<td>2,500</td>
</tr>
<tr>
<td>Good</td>
<td>1boxes×70 = 70</td>
<td>3boxes×70 = 210</td>
<td>3boxes×70 = 210</td>
<td>490</td>
</tr>
<tr>
<td>Usual</td>
<td>1boxes×40 = 40</td>
<td>2boxes×40 = 80</td>
<td>4boxes×40 = 160</td>
<td>280</td>
</tr>
<tr>
<td>total</td>
<td>1,210</td>
<td>1,090</td>
<td>970</td>
<td>3,270</td>
</tr>
</tbody>
</table>
Then, the proportion of each farmer’s score to the total is calculated as follows:

<table>
<thead>
<tr>
<th>Farmer</th>
<th>Score</th>
<th>Total Score</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1,210</td>
<td>3,270</td>
<td>37%</td>
</tr>
<tr>
<td>B</td>
<td>1,090</td>
<td>3,270</td>
<td>33.33%</td>
</tr>
<tr>
<td>C</td>
<td>970</td>
<td>3,270</td>
<td>29.67%</td>
</tr>
</tbody>
</table>

Finally, we can calculate the amount of payment to each farmer applying the score proportion. Suppose net revenue, total revenue less total marketing cost, is 1,010,000 Won.

<table>
<thead>
<tr>
<th>Farmer</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>373,700</td>
</tr>
<tr>
<td>B</td>
<td>336,633</td>
</tr>
<tr>
<td>C</td>
<td>299,667</td>
</tr>
</tbody>
</table>

| Total  | 1,010,000 |

Let’s compare the incentive payment with the average payment. Average payment applying per-box price is as follows:

Assume per-box price by grades is 28,640 Won for best, 25,857 Won for good, and 16,143 Won for usual. Amount of payment to each farmer is as follows:
### Grades

<table>
<thead>
<tr>
<th>Grades</th>
<th>Farmer A</th>
<th>Farmer B</th>
<th>Farmer C</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best</td>
<td>11 boxes $\times$ 28,640 = 315,040</td>
<td>8 boxes $\times$ 28,640 = 229,120</td>
<td>6 boxes $\times$ 28,640 = 171,840</td>
<td>716,000</td>
</tr>
<tr>
<td>Good</td>
<td>1 box $\times$ 25,857 = 25,857</td>
<td>3 boxes $\times$ 25,857 = 77,571</td>
<td>3 boxes $\times$ 25,857 = 77,571</td>
<td>180,999</td>
</tr>
<tr>
<td>Usual</td>
<td>1 box $\times$ 16,143 = 16,143</td>
<td>2 boxes $\times$ 16,143 = 32,286</td>
<td>4 boxes $\times$ 16,143 = 64,572</td>
<td>113,001</td>
</tr>
<tr>
<td>total</td>
<td>357,040</td>
<td>338,977</td>
<td>313,983</td>
<td>1,010,000</td>
</tr>
</tbody>
</table>

Then we can see that farmer A, who delivers higher-quality products, receives more returns in the incentive payment system than in the average payment system as follows:

### Unit: Korean won

<table>
<thead>
<tr>
<th></th>
<th>Incentive payment system</th>
<th>Average payment system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmer A</td>
<td>373,700</td>
<td>357,040</td>
</tr>
<tr>
<td>Farmer B</td>
<td>336,633</td>
<td>338,977</td>
</tr>
<tr>
<td>Farmer C</td>
<td>299,667</td>
<td>313,983</td>
</tr>
<tr>
<td>Total</td>
<td>1,010,000</td>
<td>1,010,000</td>
</tr>
</tbody>
</table>
3. Cases of agricultural cooperative’s pooling in Korea

3-2. Major factors in successful pooling cases

*Systematic education for farmers*

- Member-farmers’ positive participation is important for sustainable development of the cooperative’s pool marketing.

- Pooling effects become greater if member-farmers try to deliver high-quality products with a shared philosophy on pooling and a firm belief in cooperative’s pool marketing.

- Thus, the cooperative needs to operate an effective education system to pursue an increase in farmers’ understanding on pooling and thereby induce positive participation.
### Example: A six-step education of a local agricultural cooperative

<table>
<thead>
<tr>
<th>Education courses</th>
<th>Target groups and main contents</th>
</tr>
</thead>
</table>
| **Basic quality education**       | · Target group: new members (Two-time education)  
                                   · Main contents: necessity of pooling, method of pool-based payment, marketing agreements and penalties, etc.                                              |
| **Understanding of pooling**       | · Target group: all members  
                                   · Main contents: pooling system, present business status, major buyers, government’s marketing policies, etc.                                           |
| **Cultivation techniques**        | · Target group: all members  
                                   · Main contents: advanced farming techniques to produce high-quality products                                                                           |
| **Cultivation Consulting**        | · Target group: members who want  
                                   · Main contents: cultivation-related consulting by experts                                                                                            |
| **Leadership**                    | · Target group: representatives of pooling organizations  
                                   · Main contents: enhancement of leadership for successful operations of pooling organization                                                            |
| **Operation of research group**   | · Target group: representatives of pooling organizations  
                                   · Main contents: study on optimal sowing and delivering time, sharing of cultivation techniques, study on commodity adjustment to prevent damages by repeated cultivation, etc. |
3. Cases of agricultural cooperative’s pooling in Korea

3-2. Major factors in successful pooling cases

<Joint-funding for stable pool marketing>

□ Price of agricultural products sometimes fluctuate sharply.
   - Sometimes, cooperatives need to hedge against some unexpected changes, like a sharp price fall.

□ In some successful cases, cooperative and member-farmers belonging to pooling organization raise funds jointly to hedge against the risk like unexpected price-fall.

<Joint marketing among local agricultural cooperatives>

□ Joint marketing among local agricultural cooperatives → increasing market power, reducing marketing cost → increasing farmers’ economic benefit

□ Some local agricultural cooperatives established secondary marketing organizations through joint investment, mostly county and city levels.
   - Systemization among the primary pooling organizations, the local cooperatives, and the secondary marketing organization is constructed with each having its role assignment.
Example: A case of linkage among pooling organizations, local agricultural cooperatives, and secondary marketing organization

<Secondary Marketing Organization>
- Sell the products consigned by local agricultural cooperatives
- Pay local agricultural cooperatives after sale on a pool basis
- Plan for marketing strategies targeting each buyer
- Manage quality standards and criteria
- Develop new buyers and promote the joint brand

<Pooling farmers’ organizations>
- Cultivate and deliver high-quality products
- Participate in education on cultivation techniques and quality management
- Observe marketing agreements (quantity and quality)
4. Conclusion

☐ The main objective of agricultural cooperatives is to maximize member-farmers’ economic benefits.
- This can be achieved by providing member-farmers with greater returns on raw products through the cooperative’s marketing business.
- It is important that the cooperatives try to achieve a balance in market power with the buyers by establishing a large-scale pooling system.

☐ Agricultural cooperatives can increase bargaining power with a sufficiently large pooling system and thereby induce the buyers’ purchasing competition.
- This makes the agricultural market more efficient, which is known as cooperative’s ‘competitive-yardstick’ role.
- Cooperatives ultimately provide member-farmers with more returns on raw products.

☐ Pooling system can also lead to a reduction of marketing costs in each volume unit of the products by spreading out the cost over the collected products.
- This also contributes to providing member-farmers with greater returns.
4. Conclusion

Effectively operating a stable pooling system is more important than simply constructing the system.
- To consistently distribute a sufficient volume of high-quality products to the buyers is a key factor for a successful pooling operation.
- Successful pooling cases operate marketing agreements b/w farmers & cooperatives.
- Quality management and fair payment is important in terms of increase in participation of farmers with good-quality products.
- Education of member-farmers is also important because they need to understand cooperative’s identity and how its pooling system operates.

How to construct the pooling program usually depends upon agricultural market characteristics of each country.
- Cooperative’s pooling program would be applied differently depending on characteristics of product, composition of farmers, market situation of each product.
- However, it can be an effective measure for member-farmers’ economic benefits, considering current market changes.
Thank you.