The Function of Farmers’ Associations in Improving the Efficiency of Agricultural Products Marketing-
A Case Study of Taiwanese Mangoes

Su, Mao-Hsiang
Agriculture and Food Agency Council of Agriculture Executive Yuan
Chief Secretary,Nantou,Taiwan,R.O.C.
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- Introduction
- Taiwanese mango production and sale overview
- Function of Farmer’s Association in the production of mangoes
- Function of Farmers’ Associations in the marketing of mango
- Key elements in successful marketing of Taiwanese mangoes
- Conclusion
Introduction

- There are more than 30 kinds of fruits in Taiwan, with a cultivation area of more than 180,000 hectares and a total output value of US$3.23 billion.
- Tropical fruits in Taiwan are very competitive, and mango has become Taiwan’s representative premium fruits.
- Mangoes have significantly increased farmers’ incomes.
- Farmers’ Associations and the government work together to stabilize the production pricing and sale of mangoes, allowing the mango industry to become a model for success.
1. Taiwanese mango production overview (1)

In 2014, the acreage of Taiwanese mango was 15,068 hectares

Taiwanese mangoes can generally be divided into local species and new species. The local species refers to Tu mango, the new species include Irwin, Jinhuang, and Keitt.
Taiwanese mango production and sale overview (2/7)

1. Taiwanese mango production overview (2)

Irwin mangoes  Jinhuang mangoes  Tu mangoes
1. Taiwanese mango production overview (3)

- The main production area is located in Tainan, Pingtung, and Kaohsiung in south Taiwan.
- The peak harvest period is from May to July, making the production and sale challenging.
Taiwanese mango production and sale overview (4/7)

<table>
<thead>
<tr>
<th>Year</th>
<th>Acreage (hectare)</th>
<th>Output (Ton)</th>
<th>Output Value (US$ million)</th>
<th>Price in the wholesale market in Taipei (Irwin) (US$/kg)</th>
<th>Price in the production area (Irwin) (US$/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>18,394</td>
<td>149,996</td>
<td>195.96</td>
<td>1.64</td>
<td>2.26</td>
</tr>
<tr>
<td>2006</td>
<td>18,200</td>
<td>191,332</td>
<td>206.45</td>
<td>1.25</td>
<td>2.01</td>
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<td>2007</td>
<td>18,375</td>
<td>215,292</td>
<td>219.11</td>
<td>1.23</td>
<td>1.67</td>
</tr>
<tr>
<td>2008</td>
<td>18,090</td>
<td>176,716</td>
<td>213.77</td>
<td>1.59</td>
<td>1.99</td>
</tr>
<tr>
<td>2009</td>
<td>17,130</td>
<td>140,290</td>
<td>163.37</td>
<td>1.29</td>
<td>1.91</td>
</tr>
<tr>
<td>2010</td>
<td>16,796</td>
<td>135,293</td>
<td>162.35</td>
<td>1.41</td>
<td>2.30</td>
</tr>
<tr>
<td>2011</td>
<td>16,695</td>
<td>169,380</td>
<td>208.99</td>
<td>1.62</td>
<td>2.24</td>
</tr>
<tr>
<td>2012</td>
<td>16,356</td>
<td>167,247</td>
<td>226.32</td>
<td>1.97</td>
<td>2.57</td>
</tr>
<tr>
<td>2013</td>
<td>16,508</td>
<td>215,168</td>
<td>296.17</td>
<td>1.59</td>
<td>1.84</td>
</tr>
<tr>
<td>2014</td>
<td>15,068</td>
<td>152,932</td>
<td>245.83</td>
<td>1.81</td>
<td>2.16</td>
</tr>
</tbody>
</table>

Remark: Exchange rate: US$1: NT$31
2. Taiwanese mango sales overview(1)

- In recent decades, the wholesale price of Taiwanese mangoes in fruit and vegetable wholesale markets in Taipei has been between US$1.23~1.97/kg, while the price in the production area has been between US$1.67~2.57/kg.
- The reason the price in the production area is higher is because exporters directly sign contracts with the Farmers’ Association, and the price of mangoes which comply with the export specifications becomes higher.
2. Taiwanese mango sales overview(2)

- In 2015 ended July, 8,262 tons of Taiwanese mangoes were exported, with an export value of US $23,967,000. The highest export amount and value.
- In recent years, exports have increased on a yearly basis due to the influence of climate on the output in 2012, as well as its export value.
- The main exporting countries include Mainland China, Hong Kong, Korea, Japan, Singapore, Malaysia, Canada, Russia, Brunei, Macao.
## Taiwanese mango production and sale overview (7/7)

### Major exporting countries, amount, and output value of Taiwanese mango

<table>
<thead>
<tr>
<th>Year</th>
<th>Mainland China</th>
<th>Hong Kong</th>
<th>Japan</th>
<th>Korea</th>
<th>Singapore</th>
<th>Other countries</th>
<th>Total</th>
<th>Value</th>
<th>US$1,000/ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>248</td>
<td>915</td>
<td>838</td>
<td>551</td>
<td>650</td>
<td>106</td>
<td>3,307</td>
<td>10,052</td>
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<tr>
<td>2009</td>
<td>313</td>
<td>1,506</td>
<td>993</td>
<td>415</td>
<td>1,170</td>
<td>143</td>
<td>4,539</td>
<td>9,845</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>402</td>
<td>1,576</td>
<td>1,009</td>
<td>541</td>
<td>1,069</td>
<td>101</td>
<td>4,699</td>
<td>11,924</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>479</td>
<td>1,356</td>
<td>1,161</td>
<td>524</td>
<td>750</td>
<td>113</td>
<td>4,382</td>
<td>14,717</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>429</td>
<td>425</td>
<td>834</td>
<td>417</td>
<td>181</td>
<td>71</td>
<td>2,357</td>
<td>11,374</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>1,378</td>
<td>2,107</td>
<td>810</td>
<td>721</td>
<td>1,158</td>
<td>93</td>
<td>6,266</td>
<td>15,320</td>
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</tr>
<tr>
<td>2014</td>
<td>2,064</td>
<td>1,889</td>
<td>760</td>
<td>917</td>
<td>700</td>
<td>106</td>
<td>6,438</td>
<td>17,454</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>3,251</td>
<td>1,846</td>
<td>802</td>
<td>1,763</td>
<td>498</td>
<td>102</td>
<td>8,262</td>
<td>23,967</td>
<td></td>
</tr>
</tbody>
</table>

*(July)*
1. Promote the establishment of group areas

Farmers’ Associations are responsible for integrating farmers of adjacent production areas and product marketing classes into group, expand the scale of operations, introduce premium species and techniques, and improve the percentage of high quality fruit products.
Function of Farmers’ Associations in the production of mango (2/5)

2. Forge cooperation contracts between supplying orchards and exporters

• Farmers’ Associations match exporters and supplying orchard farmers to build a long-term steady cooperation and counsels supplying orchard farmers for export to enter into contracts with exporters and register for management.

• As of 2015, 26 exporters and 690 farmers are registered, with a total area of 667 hectares.
Function of Farmers’ Associations in the production of mango (3/5)

3. **Establish a safety management system**

- To ensure food safety meeting production specifications of exporting countries, each mango is labeled with a traceability barcode.
- Inspection of pesticide residues is held before harvest, and farmers may only harvest mango after passing inspection.
4. Enhance the quality of fruit products

- The government invites experimental stations scholars and experts to form a mango technical service group to hold seminars in production areas.
- Since 2014, the government asked farmers and exporters to participate in training seminars so that they will be qualified to export.

Farmers’ Associations are responsible for inviting farmers of each production area to participate in seminars and counsel farmers on cultivation management and pesticide use.
5. Promote the quality standard of mango—Brix should be at least 12 degrees

- Since 2013, Farmers’ Associations counseled farmers on enhancing the self-inspection and control of mango Brix.
- In addition to the inspection of pesticide residues in the steaming house, inspection of mango Brix is also implemented. If the Brix is less than 12 degrees, export of mangoes will not be permitted.
1. Set up collecting and packaging centers equipped with air conditioning

- The temperature of the fruit which is delivered from the field is relatively high. Farmers’ Associations set up collecting and packaging centers equipped with air conditioning to reduce the temperature of fruit prior to packing and effectively maintain quality.

- The paper bags of mango are removed in the isolated packaging center to reduce fruit fly damage.
Function of Farmers’ Associations in the marketing of mango (2/11)

2. Employees of the Farmers’ Association serve as sorting personnel to carry out the grading and sorting operations (1/2)

- Employees of the Farmers’ Association serve as sorting personnel to fairly and thoroughly carry out grading and sorting operations based on the neat shape, spots, bug spots, scars, crushes, and sap contamination on the peel.
- Later, the harvested mangoes will be graded by the grading machine based on their weight.
Function of Farmers’ Associations in the marketing of mango (3/11)

2. Employees of the Farmers’ Association serve as sorting personnel to carry out the grading and sorting operations (2/2)
3. Preservation and hot water treatment (1/2)

- In addition to reducing the temperature in the packaging field equipped with air conditioning, water selection and wash based on weight are carried out to remove dust and spots.
3. Preservation and hot water treatment (2/2)

- Hot water treatment is implemented to constrain latent diseases from developing and extend the fruit’s shelf life.
Function of Farmers’ Associations in the marketing of mango (6/11)

4. Quarantine, packing, basket loading and barcode sticking (1/2)

- Mangoes for export to Japan and Korea require quarantine treatment to ensure that insects are killed completely.
4. Quarantine, packing, basket loading and barcode sticking (2/2)

- After the steaming handling and temperature reduction, the packaging operation is carried out.
- Starting in 2007, every mango in the packaging process is labeled with the name of each farmer for traceability.
5. Pre-cooling, storage, and sales (1/2)

- Mangoes for export are stored in refrigerators after packaging and are shipped in refrigerated containers.
5. Pre-cooling, storage, and sales (2/2)

- After grading, sorting, and packaging are complete, the Farmers’ Associations hire trucks to ship mangoes for domestic and wholesale markets.
Function of Farmers’ Associations in the marketing of mango (10/11)

6. Diversification of mango products (1/2)

• Taiwanese mango tastes good and can be made into various processed products, including dried mango, mango ice, mango popsicles, and ice cream.
6. Diversification of mango products (2/2)

- Mango can even be added to cuisine and made into desserts, such as mango cakes, mango pies, and mango jellies.
- With the support of the government, Farmers’ Associations set up cooperation between mango processing factories or processors to build a long-term steady supply, and effectively help in the production and sale of mangoes, and increase the added value.
According to a survey conducted by Japan YAHOO in 2007, Taiwanese mangoes were selected by 76% of consumers as the best mango in the Japanese market.

In 2008, the Taiwanese mango was selected to be the recommended fruit in the Beijing Olympics.

The Taiwanese mango has been successfully sold to more than 10 countries.

In the analysis of the successful marketing of the Taiwanese mango, the Farmers’ Association plays an important role.
Key elements in successful marketing of Taiwanese mangoes (2/3)

- Farmers’ Association + Government
  - Technical service group integrate the establishment of group areas
  - Safety management system
  - Modern packaging and collecting center
  - Provide various materials of production
  - Adopt a new channel - home delivery
  - Diversify mango products, promote Taiwanese mango at international fairs
Key elements in successful marketing of Taiwanese mangoes (3/3)
Conclusion

- Under the joint effort of the government and Farmers’ Association, the Taiwanese mango has built up a premium image of safety.
- The increasing export value indicates that the safety management system jointly built by the Farmers’ Association and the government has improved the quality and safety of the mango.
- The mango farmers benefit by the steady production and sale of the fruit and increase in the price.
- The mango industry has become a successful model in the fruit industry in Taiwan.
Thank you