



The Impact of Agricultural Cooperatives on Agricultural Marketing: Taiwan's Experience

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1. Introduction

Taiwan is island with space about 3,618,995 hectare. 27.11% of Taiwan is plain region about 981,144ha. 27.12% of Taiwan is hilly about 981,424ha, and the remaining 45.77% is mountain. Cropland about 799,611ha (22.21%) most of them are located in the western part of Taiwan. There are two million farmers in Taiwan twenty three million people. According to Council of Agriculture statistics, it has 780 thousand farm families in 2014. The average cropland space per farm family is less than one hectare, the small scale farm. Cooperation for farmers one another is very important.





In 1981, Taiwan government passed the Agricultural Products Market Transaction Act (2012.11.28) to help setting agricultural marketing channel that is from farmers to agricultural products wholesales market then to retailer to consumers. The Act has two main parts: joint marketing and wholesale market. The first is to make sure supply for market that is to help farmers to sale their agricultural products in the wholesale market. The wholesale market plays the role to collect agricultural products, and then distributes to the consumer by shipper and retailer. By the Act, the wholesale market need to deal with joint marketing agricultural products first to make sure those agricultural products shipping by joint marketing could sold out.



2. Joint Marketing of Agricultural Products, Vegetable and Fruit

Table 1 is shown 1993-2014 joint marketing vegetable and fruit and their percentage of agricultural product wholesale market transaction annually. In 1982, Agricultural Products Transaction Act was passed. Eleven years later 1993, joint marketing vegetable with 211,796 ton was 0.095 of total agricultural product wholesale market transaction. For fruit with 137,509 ton was 0.0617 of total transaction. From 1993 to 2014 vegetable and fruit transaction in agricultural products wholesale markets is around two million three hundred thousand ton. The highest is 2,542,240 ton in 2002, the lowest with 2,152,471 ton in 2005. The trend of total transaction seems stable keeping around two million some ton annually. For vegetable, joint marketing is successful from 211,796 ton (0.095) in 1993 increasing continuously to 464,956 ton (0.1838) in 2014 over two times as amount and percentage.



Table 1 1993-2014 joint marketing vegetable and fruit and their percentage of agricultural products wholesale markets[Ⓢ]

Year [Ⓢ]	Joint Marketing(ton) [Ⓢ]		Total(ton) [Ⓢ]	Vegetable [Ⓢ]	Fruit [Ⓢ]
	Vegetable (ton) [Ⓢ]	Fruit (ton) [Ⓢ]	Vegetable & Fruit (ton) [Ⓢ]	% [Ⓢ]	% [Ⓢ]
2004 [Ⓢ]	310,711	185,940	2,328,068	0.1335	0.0799
2005 [Ⓢ]	276,153	147,306	2,152,471	0.1283	0.0684
2006 [Ⓢ]	325,096	181,288	2,298,723	0.1414	0.0789
2007 [Ⓢ]	328,031	189,373	2,304,561	0.1423	0.0822
2008 [Ⓢ]	349,377	170,756	2,291,685	0.1525	0.0745
2009 [Ⓢ]	390,582	175,247	2,399,798	0.1628	0.0730
2010 [Ⓢ]	399,960	174,489	2,398,916	0.1667	0.0727
2011 [Ⓢ]	416,244	190,064	2,453,625	0.1696	0.0775
2012 [Ⓢ]	421,533	178,614	2,332,707	0.1807	0.0766
2013 [Ⓢ]	443,884	191,053	2,491,033	0.1782	0.0767
2014 [Ⓢ]	464,956	185,856	2,529,361	0.1838	0.0735



As Agricultural Product Market Transaction Act, joint marketing may be performed by farmers' organization. Table 2 and Table 3 are shown three main farmers' organizations performing joint marketing separately.

National Farmers' Association and Agricultural Production Cooperative are the major organizations of performing joint marketing of vegetable. Both of them are occupied about 40 some percentages of total amount of joint marketing vegetable. The third organization R. O. C. Fruit & Vegetable Cooperative performed less amount of joint marketing vegetable.





Table 2 2004-2014 Joint Marketing Vegetable by Three Main Organizations

unit: ton and %

Year	Total	National Farmers' Association		R.O.C. Fruit & Vegetable Cooperative		Agricultural Production Cooperative	
		ton	%	ton	%	ton	%
2004	310,711	127,282	0.41	20,584	0.07	142,879	0.46
2005	276,153	120,493	0.44	21,262	0.08	133,963	0.49
2006	325,096	134,007	0.41	26,265	0.08	144,578	0.44
2007	328,031	132,546	0.40	28,496	0.09	148,617	0.45
2008	349,377	138,232	0.40	33,498	0.10	160,170	0.46
2009	390,582	147,616	0.38	41,989	0.11	182,666	0.47
2010	399,960	152,309	0.38	43,184	0.11	186,994	0.47
2011	416,244	161,121	0.39	50,601	0.12	187,560	0.45
2012	421,533	152,537	0.36	61,432	0.15	190,980	0.45
2013	443,884	165,919	0.37	66,909	0.15	193,384	0.44
2014	464,956	175,854	0.38	66,673	0.14	204,812	0.44



Table 3 Joint Marketing Fruit by Three Main Organizations[↕]

Year [↕]	Total of Joint Marketing [↕]	National Farmers' Association [↕]		R.O.C. Fruit & Vegetable Cooperative [↕]		Agricultural Production Cooperative [↕]	
	Ton [↕]	ton [↕]	% [↕]	Ton [↕]	% [↕]	Ton [↕]	% [↕]
2004 [↕]	185,940	113,823	0.61	9,515	0.05	39,354	0.21
2005 [↕]	147,306	93,980	0.64	9,302	0.06	32,667	0.22
2006 [↕]	181,288	108,169	0.60	11,542	0.06	39,497	0.22
2007 [↕]	189,373	109,077	0.58	13,395	0.07	42,362	0.22
2008 [↕]	170,756	98,012	0.57	12,377	0.07	38,032	0.22
2009 [↕]	175,247	99,196	0.57	14,329	0.08	38,900	0.22
2010 [↕]	174,489	99,409	0.57	15,985	0.09	37,520	0.22
2011 [↕]	190,064	108,023	0.57	18,280	0.10	42,118	0.22
2012 [↕]	178,614	101,476	0.57	16,611	0.09	41,054	0.23
2013 [↕]	191,053	112,530	0.59	17,603	0.09	42,741	0.22
2014 [↕]	185,856	106,127	0.57	20,572	0.11	41,689	0.22



Table 4 is shown supplier of joint marketing for vegetable and fruit. Obviously, the number of supplier will influence the amount of vegetable and fruit joint marketing. Supplier may be overlapped between those farmer organizations.





Table 4 Supplier of Joint Marketing of Three Main Organizations

Year	National Farmers' Association		Republic of China Fruit & Vegetable Cooperatives		Agricultural Production Cooperatives	
	Vegetable	Fruit	Vegetable	Fruit	Vegetable	Fruit
2004	189	185	34	34		
2005	189	180	37	37	169	181
2006	186	178	47	49	176	190
2007	191	178	47	51	190	202
2008	187	180	60	63	202	207
2009	196	181	69	72	210	210
2010	194	184	73	86	217	226
2011	196	185	81	93	225	229
2012	190	192	80	86	231	242
2013	191	190	85	86	244	244
2014	198	191	94	93	244	253

Source: National Farmers' Association, Republic of China Fruit & Vegetable |



3. Agricultural Cooperative in Taiwan

Pursuant to Cooperative Act, a cooperative need to register in Ministry of the Interior. There are five different agricultural cooperatives: production, marketing, labor, supply, and producers' utility in single-purpose agricultural cooperative. Another agricultural marketing related cooperative is cooperative farm. Concerning agricultural marketing, production cooperative, marketing cooperative, and cooperative farm are the paper interested only. Table 5 is shown the number and membership of agricultural cooperative in 2013. There are 983 agricultural cooperatives and 225 cooperative farms, 1,208 unit cooperative and federation totally. For membership, there are 169,044 persons, agricultural cooperative with 148,868 persons and cooperative farm with 20,176 persons. At the time, there are 1,564 legal persons total, agricultural cooperative with 1,537 legal persons and cooperative farm with 27 legal persons.



Table 5 Number and Membership of Agricultural Cooperatives, 2013

Agricultural Cooperative		Number of Cooperatives			Membership	
		Total	Unit co-op	Federation	Person	No of co-op
Grand Total		1,208	1,194	14	169,044	1,564
Single-Purpose Agricultural Cooperatives	Production	664	656	8	61,571	644
	Marketing	319	315	4	87,297	893
Sub-total		983	971	12	148,868	1,537
Cooperative Farm		225	223	2	20,176	27

Source: Cooperative Enterprise Yearbook, 2014





Table 6 is shown the number and membership of agricultural production cooperatives from 2003 to 2013. The number of agricultural production cooperatives is 287 in 2003 and 664 in 2013, increasing almost two and half times. The membership of agricultural production cooperatives, the number of cooperatives is 184 in 2003 and 644 in 2013, increasing about three and half times. However, the person of membership is 68,693 in 2003 decreasing to 61,571 in 2013. Therefore, the person per cooperative averagely is 373 persons per cooperative in 2003 shrinking to 96 persons per cooperative in 2013.





Table 6 Number & Membership of Agricultural Production Cooperatives

Year	Number of Cooperatives			Membership	
	Total	Unit co-op	Federation	Person	Number of Cooperatives
2003	287	281	6	68,693	184
2004	369	364	5	71,176	166
2005	416	410	6	64,303	204
2006	457	451	6	64,950	299
2007	516	510	6	59,068	224
2008	507	501	6	57,965	222
2009	542	536	6	59,878	313
2010	565	558	7	63,157	414
2011	596	589	7	59,031	449
2012	615	608	7	59,627	471
2013	664	656	8	61,571	644

Source: Cooperative Enterprise Yearbook, 2014



Table 7 is shown number and membership of marketing cooperatives from 2003 to 2013. The number of marketing cooperatives is 134 in 2003 and 328 in 2013, about 2.4 times increasing. The membership of marketing cooperatives, number of cooperatives is 485 in 2003 and 893 in 2013. In 2004, the data is missing and 80 in 2005 is an outlier. It seems the data is not precise in two years. The person per cooperative is 208 ($100,858/485$) in 2003 and 105 ($93,370/893$) in 2013, the amount almost half of 208.





Table 7 2003-2013 Number & Membership of Marketing Cooperatives

Year	Number of Cooperatives			Membership	
	Total	Unit co-op	Federation	Person	No of co-op
2003	134	132	2	100,858	485
2004	174	172	2	98,395	Missing
2005	188	187	1	92,990	80
2006	215	211	4	90,655	723
2007	219	214	5	62,469	838
2008	240	237	3	137,041	592
2009	253	249	4	139,063	723
2010	267	263	4	92,701	736
2011	301	297	4	94,042	689
2012	310	306	4	93,129	836
2013	328	324	4	93,370	893

Source: Cooperative Enterprise Yearbook, 2014



Since agricultural cooperatives are spread to whole country especially in agricultural area, a location of agricultural cooperative would be agricultural area located. Table 8 is shown number and membership of cooperative farms by locality. Yunlin H. with 64 cooperative farms is the most number in Taiwan. It is one of important vegetable production areas. Kaohsiung C. with 27 cooperative farms, Taoyuan H. (now it is City) with 36 cooperative farms, and Nantou H. with 27 cooperative farms, they are main fruit production areas in Taiwan. Therefore, all of them have more membership with more people comparing with other areas in Taiwan.



Table 8 Number and Membership of Cooperative Farms by Locality in 2013

Locality	Number of Cooperative Farm			Membership	
	Total	Unit co-op	Federation	Person	No of co-op
Taipei C.	1	1	0	10	0
Kaohsiung C.	27	27	0	4021	0
Hsinchu M.	1	1	0	36	0
Taichung C.	16	16	0	2833	0
Tainan C.	7	7	0	926	0
Ilan H.	1	1	0	31	0
Taoyuan H.	36	35	1	2750	20
Hsinchu H.	6	6	0	397	0
Miaoli H.	8	8	0	301	0
Changhua H.	16	16	0	1793	0
Nantou H.	27	27	0	1569	0
Yunlin H.	64	64	0	4432	0
Chiayi H.	12	12	0	745	0
Pingtung H.	2	2	0	332	0
National Level	1	0	1	0	7
Grand Total	225	223	2	20176	27

Source: Cooperative Enterprise Yearbook, 2014



Table 9 is shown number and membership of cooperatives farms 1990 to 2013. The number of cooperative farms is around two hundred, two decades not much change. The membership of cooperative farms is around twenty thousand persons keeping stable from 1990 to 2013. The membership of cooperative farms, the person is 21,809 in 1990 and 20,176 in 2013, not much different from 1990 to 2013. However, the person per farm is 217 ($21,809/85$) in 1990, and 747 ($20,176/27$) in 2013, increasing three times ($747/217$) in 24 years 1990 to 2013.





Table 9 1990-2013 Number & Membership of Cooperative Farms⁴

Year ⁴	No. of cooperatives ⁴			Membership ⁴	
	Total ⁴	Unit co-op ⁴	Federation ⁴	Person ⁴	No of co-op ⁴
2000 ⁴	199	196	3	20,353	82 ⁴
2001 ⁴	199	197	2	20,415	40 ⁴
2002 ⁴	202	200	2	21,473	40 ⁴
2003 ⁴	206	204	2	19,078	37 ⁴
2004 ⁴	204	202	2	19,627	42 ⁴
2005 ⁴	195	193	2	19,394	38 ⁴
2006 ⁴	202	201	1	19,590	7 ⁴
2007 ⁴	214	212	2	19,791	35 ⁴
2008 ⁴	223	221	2	20,262	35 ⁴
2009 ⁴	230	228	2	19,823	24 ⁴
2010 ⁴	225	223	2	19,509	24 ⁴
2011 ⁴	228	226	2	19,550	24 ⁴
2012 ⁴	224	222	2	19,120	27 ⁴
2013 ⁴	225	223	2	20,176	27 ⁴

Source: Cooperative Enterprise Yearbook, 2014⁴



4. The Role of Government in Agricultural Marketing

The Government amended Agricultural Development Act (2010, 12, 8) Article 3 in February 7, 2003 to add Item 16 the definition of Cooperation Group as: An agricultural organization which is voluntarily formed and managed by farmers together whose lands are adjacent or close to each other, or manage the same type of agricultural activities. Actually, there were some Cooperation Group in agricultural production region before 2003. Since they did not have legal position, the Government could not support them well. In other word, the total amount of Cooperation Group was over six thousand, forcing government to face the situation, see Table 10.g



Table 10 Cooperation Group Whole Country, Vegetable and Fruit[↗]

Year [↗]	Whole Country [↗]		Vegetable [↗]			Fruit [↗]		
	Group [↗]	Member [↗]	Group [↗]	Member [↗]	Range [↗] (ha) [↗]	Group [↗]	Member [↗]	Range [↗] (ha) [↗]
2000 [↗]	5,140	94,553	1,625	31,595	31,113	1,914	35,894	47,622
2001 [↗]	5,684	104,951	1,798	35,207	36,610	2,081	38,860	51,015
2002 [↗]	6,001	111,343	1,909	37,655	38,633	2,223	41,797	53,834
2003 [↗]	6,599	122,001	2,093	41,178	41,746	2,428	45,745	58,449
2004 [↗]	6,931	127,544	2,196	42,935	43,594	2,572	48,118	60,874
2005 [↗]	7,123	132,023	2,273	45,014	45,071	2,588	48,699	61,378
2006 [↗]	6,447	119,813	2,062	41,276	38,168	2,397	45,458	54,866
2007 [↗]	6,171	118,161	1,934	39,536	36,045	2,352	46,385	54,275
2008 [↗]	6,207	119,527	1,920	39,723	36,066	2,387	47,000	70,964
2009 [↗]	6,138	119,877	1,914	40,013	35,909	2,300	46,151	70,087
2010 [↗]	6,216	122,694	1,936	40,847	35,903	2,317	46,603	69,876
2011 [↗]	6,396	126,238	1,989	42,199	36,646	2,364	47,358	70,274
2012 [↗]	6,355	128,127	1,980	42,911	36,003	2,361	48,115	69,680
2013 [↗]	6,279	127,952	1,960	42,997	35,618	2,323	48,037	68,625
2014 [↗]	6,280	128,763	1,958	43,363	35,592	2,322	48,229	68,193
2015 [↗]	6,274	128,786	1,936	43,078	35,058	2,315	48,306	67,759

Source: Agriculture and Food Agency, Council of Agriculture, Executive Yuan,



5. Discussion on Taiwan Agricultural Marketing & Cooperative

(1) Market Share:

According to Table 1, vegetable and fruit joint marketing volumes are about one quarter of transaction in agricultural products wholesale markets. The number is obtained by Equation (1) and as follows.

$$\frac{464,956 + 185,856}{2,529,361} = 25.7\% \quad (1)$$





Table 5 and Table 10, farmer population of agricultural cooperatives and cooperation groups is about 8.7% of whole country farmer population, in Taiwan Agricultural Yearbook 2013. It is found by the following Equation (2).⁴

$$\frac{169,044 + 91,384}{2,988,973} = 8.7\% \quad (2)^{4}$$

There is 799,611 hectares in Taiwan cropland according to Taiwan Agricultural Yearbook 2013. From Table 10, about 12.9% cropland is joined in cooperation group. The percentage is provided by the Equation (3).⁴

$$\frac{35,058 + 67,759}{799,611} = 12.9\% \quad (3)^{4}$$



(2) Farmer Organization and Agricultural Cooperative

Farmer organization is not necessary an agricultural cooperative in Taiwan. Responsible government authorities for them are different, the Council of Agricultural and Ministry of the Interior respectively. One challenge is how to perform agricultural marketing well for both of them.

(3) Agricultural Products Wholesale Market

Pursuant to Agricultural Products Market Transaction Act Article 25: The transaction modes of the agricultural product wholesale market are to auction, to negotiate prices, to mark the prices, to enter a bid. The supplier may specify the lowest transaction price. Joint marketing or cooperative agricultural products suppliers are prefer to ship their products to an agricultural products wholesale market with auction transaction mode.



(4) Farmer Education and Training

Farmers are the most important factor of performing better agricultural marketing. Farmers organize farmers' association and register as agricultural cooperative. Therefore, farmer education and training is very critical for making sure farmer organizations and agricultural cooperatives function well. Therefore, the program for farmer education and training is necessary and helpful for agricultural marketing.





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Thank You!

