

# Status of the Fruit and Vegetable Industry in Thailand

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## ABSTRACT

Fruit and vegetable of Thailand are well known in their exotic character. Thai growers know the production technique as well as utilization of the produces. Like other crops, fruit and vegetable production fluctuates from year to year due to the tradition in production methods which are mainly weather dependent as well as the fluctuation of farm prices. In recent years many kinds of tropical fruits and vegetables have been produced in the country and have an immense success both in the local market and abroad.

**Key words:** fruit, vegetable, industry, Thailand

## INTRODUCTION

Thailand is an agricultural country with the total area of approximately 51.31 million hectares. More than 20.11 million hectares is used for agricultural production of which rice is still a predominant crop. Rubber, maize, cassava, sugar cane, kenaf and soybean are also important crops. Horticultural crops comprising of fruits, vegetables and flowering plants are widely grown (Table 1) and their distribution to the country's economy is increasing every year. The importance of horticultural crops especially fruits and vegetables is being noticed by the government and the development of the industry was included in the National, Social and Economic Development Plan since 1981 (Plan V).

## Fruit production

Total area for tree crops (including rubber and oil palm) during the last five years, averaged 2.91 million hectares with 1.30 million hectares are devoted for growing fruit crops. The planted area of fruits in the past five years was in the figure of 1.2 to 1.3 million hectares (Table 1). There are many reasons for this inconsistent figure, but there is a sign of a decline in planting area which may be due to the senescence of old trees as well as the alteration of land utilization.

Many land holders in Thailand are concerned with home garden production in which wide varieties of fruits are grown in the same planting area. Now, a large number of land in suburban regions, where previously excellent fruit varieties are grown, has

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**Table 1** Planted area and production of fruit trees, 1988-1992.

Year	Planted area (x 10 <sup>3</sup> ha)	Production (x 10 <sup>3</sup> ton)
1988	1,324	4,921
1989	1,308	6,681
1990	1,265	7,233
1991	1,299	7,547
1992	1,316	7,930
Average	1,302	6,862

Source : Department of Agricultural Extension, 1993

been bought by businessman and diverted the agricultural land for other business purposes like trade centers, factories and housing estates. In addition, some fruit growers may not be able to stand high cost of living or cannot solve the pollution problems, so they are forced to leave their old orchards.

Although the total planted area of fruits is not increasing, a rise in the production increases every year. This shows the increase in productivity of fruit trees. With the introduction of modern technologies and good farm management, one can expect an even greater increase in fruit production in the future. Also with the promotion in marketing and export potential of some fruits, one can foresee a bright future of fruit industry in Thailand. One good example can be seen in the Southern Fruits and Vegetable Development Center in Songkla province, Thailand which has announced its exort activities of mangosteen and other fruits in the South. The planning is said to cover the area of 10 southern provinces, with the cooperation of the Department of Agricultural Extension, the Department of Agriculture and fruit exporters in the

South. There are also several regional policies of similar kinds which are expected to stimulate the expansion of fruit production in the future.

Total fruit production in Thailand during the last five years was amounted to an average of 6.86 million tons (Table 1). The figure varied from year to year between 4.92 and 7.93 million tons due to the fluctuation of weather conditions and planting areas. Data in 1992, showed the figures of 7.93 million tons of this amount, 0.84 million tons, or 10.5 percent were exported. The value of fresh fruits exported in 1994 was 97.61 million U.S. dollars (Table 2). It is expected that the total fruit production and the value exported will be increased in the near future. However, for the next decade, the increase in total fruit production may not be expected so much as fresh fruit producers will focus on export quality rather than quantities. Although there is an encouraging atmosphere in investment in fruit processing industry which seem to bring about a broad spectrum of growing fruits for raw materials in making processed products, the total fruit production will not increase sharply in the future.

The major economic fruits that contribute reasonable export earnings include longan, rambutan, lychee, grape, mango, mangosteen, tangerine, durian, pineapple and pomelo.

Longan is a well known fruit crop that has been grown in Thailand over 100 years with the production area concentrated in the Northern provinces especially Chiang Mai and Lamphun (Yaacob and Subhadrabandhu, 1995) In 1989, the planted area of 25,585 hectares with the production 57,066 tons were recorded (Anon, 1990). About 80% of the fruit production is consumed domestically as fresh longan

fruits and the rest are exported as fresh and canned longan (Table 3). The exporting markets of Thai longan are Malaysia, the United States, Singapores, Hong Kong, Canada, France, Australia and Japan.

Rambutan is also a well known fruit crop that has been introduced into Thailand over 100 years ago. The cultivated areas are in the Southern and the Eastern provinces. The major producing provinces are Chanthaburi, Rayong, Trat, Prachin Buri, Surat Thani, Chumphon and Nakhon Si Thammarat. In 1989, the planted area of 70,639 hectares with the production of 528,305 tons were recorded for

**Table 2** Production and export value of fresh fruits.

Year	Production (ton)	Export value (million U.S. dollars)
1989	568,411	343.55
1990	679,635	451.67
1991	709,387	593.00
1992	822,054	642.32
1993	892,768	615.07

Source : Department of Economic and Trade

**Table 3** Export volume and value of longan from Thailand.

Item	1987		1988		1989		1990	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Fresh longan	2,860	3.77	12,442	8.32	3,205	2.86	14,355	8.45
Dried longan	49	0.19	521	1.86	154	1.11	837	3.24
Canned longan	1,954	2.92	8,199	10.26	3,227	4.51	8,554	10.18
Frozen longan	-	-	261	0.59	163	0.37	187	0.38
Total	4,863	6.89	21,423	21.03	6,749	8.85	23,933	22.24

volume = ton

value = million U.S. dollars

Source : Department of Customs and Department of Business Economics

rambutan (Anon, 1990). Most of rambutan produced is consumed locally and a small quantity is for export as fresh and canned fruits to Hong Kong, Singapore and the United States (Table 4).

Lychee is another fruit crop that has been introduced and grown in Thailand over the same period as longan. The major producing areas of lychee are in the northern provinces such as Chiang Mai, Chiang Rai, Nan and Phayao. The famous varieties are Hong Huay, O-Hia and Kim Jeng. In 1989 the planted area of lychee was amounted to

9,622 hectares with the production of 23,556 tons (Anon, 1990). Most of lychee produced is consumed locally and a small quantity is exported mainly as fresh and canned fruits to Hong Kong, Malaysia, Singapore and the United States (Table 5).

Grape was considered to be recently introduced to Thailand. This crop is suitably grown in the western region especially in Ratchaburi, Nakhon Pathom, Samut Songkhram and Samut Sakhon provinces. The two most suitable varieties are White Malaga and Cardinal. The time taken from flowering

**Table 4** Export volume and value of rambutan from Thailand.

Item	1987		1988		1989		1990	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Fresh fruits	2,027	0.63	1,726	0.54	601	0.23	2,218	0.57
Canned fruits	1,630	1.67	2,313	2.43	1,698	1.81	1,604	1.67
Canned rambutan with pineapple	1,944	2.20	2,742	2.90	3,346	3.64	3,835	4.19
Total	5,601	4.52	6,781	5.86	5,645	5.67	7,657	6.43

volume = ton

value = million U.S. dollars

Source : Department of Customs and Department of Business Economics

**Table 5** Export volume and value of lychee from Thailand.

Year	Fresh fruit		Canned fruit		Total	
	Volume	Value	Volume	Value	Volume	Value
1987	1,460	1.37	474	0.62	1,934	2.00
1988	776	0.69	1,546	2.04	2,322	2.74
1989	744	0.74	5,879	7.47	6,623	8.21
1990	769	0.86	3,775	5.28	4,544	6.14

volume = ton

value = million U.S. dollars

Source: Department of Customs and Department of Business Economics.

till harvesting is 130-140 days for White Malaga and 100-110 days for Cardinal. With the climate is favorable for growth, grape growers now adopted forcing technique to produce grape all year round. In 1989, the planted area of grape in Thailand was about 3,860 hectares and the production of berry was 53,502 tons. Most of grape produced is consumed domestically with a small quantity exported as fresh and canned fruits. Thailand exports fresh grape to Malaysia and raisin (dried grape) to Singapore.

Mango is one of the most important economic fruit crops in Thailand. It is grown in all regions, the production and planted area in each region is shown in Table 6. At present, mango production has greatly been developed through improved varieties and

production techniques to meet consumer demands of high quality fruits. Majority of the fruits produced is consumed domestically, however overseas demand for Thai mango has steadily increased both in the forms of fresh and canned fruits. The amount and value of mango exported is indicated in Table 7, the important export markets of fresh fruits are Malaysia, Hong Kong and Singapore, whereas canned mangoes are exported to the Netherlands, Great Britain, Canada and France.

Mangosteen is regarded as the queen of tropical fruits. The production is limited to the Southern and the Eastern provinces which is due to the suitability of climatic conditions. The leading provinces in mangosteen production are Nakhon Si

**Table 6** Planted area and production of mango in Thailand.

Region		1982	1987	1988	1989
Northeast	Planted area (ha)	65,280	64,800	68,000	64,000
	Production (ton)	217,927	134,913	143,232	129,362
North	Planted area (ha)	55,520	42,880	44,160	47,680
	Production (ton)	120,575	86,251	88,155	101,363
Central	Planted area (ha)	13,760	15,520	16,160	19,680
	Production (ton)	46,301	37,672	41,896	52,958
East	Planted area (ha)	28,160	29,920	32,000	30,720
	Production (ton)	77,357	85,558	96,052	96,640
West	Planted area (ha)	17,120	15,200	19,520	19,680
	Production (ton)	46,891	33,651	43,566	49,262
South	Planted area (ha)	3,520	3,840	4,320	4,000
	Production (ton)	8,298	8,524	9,335	10,674
Total	Planted area (ha)	183,520	172,320	184,160	185,760
	Production (ton)	517,348	386,569	422,237	440,280

Source : Department of Agricultural Extension

Thammarat, Chumpon, Surat Thani in the South and Chantaburi, Rayong, Trat in the East. At present, the production of mangosteen is mainly for domestic consumption but increase in export share is expected in the future. In 1989, the planted area of 18,503 hectares with the production of 77,349 tons were recorded for mangosteen. At present, mangosteen is exported as fresh and frozen fruits to Hong Kong and Japan. The amount and value of export is shown in Table 8.

Durian has its reputation as king of the fruits grown in Thailand for over a century ago. The original area of famous durian was in Nonthaburi province near Bangkok. Nowadays, the major durian producing areas concentrate in the Eastern provinces like Chantaburi, Rayong, Trat and Prachin Buri. The popular durian varieties are Mon-Tong, Chanee and Kan Yaw. In 1989, the planted area of 82,927 hectares with the production of about 500,000 tons of durian were recorded (Anon, 1992). Durian is

**Table 7** Volume and value of mango exported from Thailand.

Year	Fresh fruit		Canned fruit		Total	
	Volume	Value	Volume	Value	Volume	Value
1987	3,736	1.13	1,332	1.31	5,068	2.44
1988	6,713	1.99	2,256	2.04	8,969	4.03
1989	4,205	1.21	2,939	2.72	7,144	3.93
1990	5,724	1.49	4,254	3.81	9,978	5.30
1991	3,210	0.94	2,079	1.95	5,289	2.89

volume = ton

value = million U.S. dollars

Source: Department of Customs and Department of Business Economics.

**Table 8** Volume and value of mangosteen exported from Thailand.

Year	Fresh fruit		Canned fruit		Total	
	Volume	Value	Volume	Value	Volume	Value
1987	11,303	9.58	-	-	11,303	9.58
1988	6,695	7.43	55	0.31	6,750	7.74
1989	8,287	9.00	7	0.02	8,294	9.02
1990	15,653	14.98	2	0.01	15,655	14.99

volume = ton

value = million U.S. dollars

Source : Department of Customs and Department of Business Economics.

exported as fresh and frozen fruits mainly to Malaysia, Hong Kong, Singapore and the United States. The amount and value of export is shown in Table 9.

### Vegetable Production

The total planted area of 27 kinds of vegetable in the last five year, averaged about 0.31 million hectares (Anon, 1992a). This figure did not include the vegetable crops that are irregularly cultivated like cantaloupe, water melon, potato and other temperate species. About 41.1 percent of vegetable growing area is located in the central plain (covers provinces in the West and the East), whereas the north-eastern and the northern regions devoted 25.5 and 24.9 percent respectively. The southern region renders the smallest area for vegetable growing because of frequent rain and most of the land are engaged in para rubber.

Like other horticultural crops, vegetables are usually grown in sub-urban area. This is because most vegetables are highly perishable and intolerant to mechanical damage during transport, in addition to

poor postharvest technology and limitation of cold storage, therefore, vegetable growing in sub-urban areas have the advantage in better transport and marketing. The city expansion is a reason in forcing vegetable growers to alter their land-use into other business or leaving their lands to other places as seen in fruit growing areas.

As for the future trend, there would be a small increase in cultivated area of vegetable within the next few years. This is due to several dynamic policies implemented by the government to stimulate the economy. The policies include the promotion of fresh vegetables as well as their processed products for exports. Today, vegetables and products from tropical regions have good prospects and become well known in many western countries and Japan. This was indicated by the increase in export value (Table 10). Many private companies are now on the verge of expanding their export activities to vegetables and fruits. This would be a sign of expansion in planted area of vegetables.

Vegetable growing in Thailand has not progressed so much and the cultivation techniques

**Table 9** Volume and value of durian exported from Thailand.

Year	Fresh and frozen		Jam		Total	
	Volume	Value	Volume	Value	Volume	Value
1987	11,303	9.58	-	-	11,303	9.58
1988	6,695	7.43	55	0.31	6,750	7.74
1989	8,287	9.00	7	0.02	8,294	9.02
1990	15,653	14.98	2	0.01	15,655	14.99

volume = ton

value = million U.S. dollars

Source : Department of Customs and Department of Business Economics.

need improvement and more mechanization is required in order to elevate the overall yield per planted area. In the old days the cultivated vegetables were predominant in chili, bird pepper, garlic, shallot, cucumber and yard long bean. These vegetables were produced and consumed locally. However, with the new technologies and the good prospect of exporting vegetables, high value vegetable crops such as asparagus, baby corn, sweet bamboo, tomato and pepper are grown and producing for export. (Table 11)

Asparagus has been introduced to growers since 1973 under the Royal Initiative Project implemented in Hub-krapong Cooperatives, Petchaburi province in the Central region. Production and marketing potentials of asparagus have been rapidly expanded to other areas and being grown for exports as fresh and canned vegetables. The amount and value of export up to 1990 are shown in Table 12.

Baby corn is consumed domestically and also exported as fresh and canned vegetables. The major

**Table 10** Export of various vegetable products (1991-1993).

	1991		1992		1993	
	Volume	Value	Volume	Value	Volume	Value
Fresh vegetables	35,583	24.3	43,042	31.0	36,507	35.5
Frozen vegetables	18,955	19.1	26,650	29.7	30,494	32.3
Canned vegetables	150,506	131.1	123,307	105.5	140,500	113.1
Vegetable with salt	2,995	2.1	5,982	5.0	6,061	5.5
Vegetable preserved by vinegar	47,896	29.8	42,045	32.5	22,967	21.1
Dried vegetables	13,777	9.7	25,886	17.7	10,749	12.4

volume = ton

value = million U.S. dollars

Source : Planning Division, Department of Agricultural Extension, 1995.

**Table 11** Planted area and production of some high value vegetables in 1990.

Vegetables	Planted area (ha)	Production (ton)	Yields (ton/ha)
Asparagus	1,804	7,966	4.4
Baby corn	20,124	116,591	5.8
Sweet bamboo	18,558	97,356	5.2
Tomato	9,935	205,719	20.7
Pepper	4,572	16,455	3.6

Source: Office of Agricultural Economics



producing areas are in the Central, the North and some provinces in the Northeast. The export competitiveness of Thai baby corn could be increased through improving product quality. In 1990 the export of baby corn from Thailand worth about 23 million U.S. dollars (Table 13).

Sweet bamboo was introduced to Thai farmers over 85 years ago. About 60 percent of bamboo shoot production goes to processing plants for export to Japan, Singapore, Hong Kong and European countries.

Main production areas are (1) in the provinces of Pachin Buri, Nakhon Nayok, Saraburi, Kanchanaburi, Chanta Buri, Chonburi, and Rayong in the Central region, (2) in Chiang Mai, Chiang Rai and Lampang provinces in the Northern region, (3) in Nakhon Rachasima, Kon Kaen, Kalasin, Yasothon, Ubon Rachathani and Buri Ram provinces in the Northeastern region and (4) in Yala, Surat Thani, Chumphon and Krabi provinces in the Southern region. The export volume and export value of sweet bamboo are shown

**Table 12** Volume and value of asparagus export from Thailand in 1987-1990.

Item	1987		1988		1989		1990	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Fresh and frozen	-	-	207	469.8	899	3,059	2,180	7,860
Canned and processed	31	18.5	133	136	186	293	678	989
<b>Total</b>	<b>31</b>	<b>18.5</b>	<b>340</b>	<b>605.8</b>	<b>1,085</b>	<b>3,352</b>	<b>2,858</b>	<b>8,849</b>

volume = ton

value = thousand U.S. dollars

Source: Department of Customs

**Table 13** Volume and value of baby corn export from Thailand (1985-1990).

Year	Fresh baby corn		Canned baby corn		Total	
	Volume	Value	Volume	Value	Volume	Value
1985	-	-	6,281	5.6	6,281	5.6
1986	-	-	11,317	9.2	11,317	9.2
1987	-	-	17,219	13.4	17,219	13.4
1988	2,220	1.5	23,396	18.0	25,616	19.5
1989	1,474	1.3	33,323	28.4	34,797	29.7
1990	1,787	1.7	26,795	21.5	28,582	23.2

volume = ton

value = million U.S. dollars

Source : Department of Customs

in Table 14.

Tomato is widely grown in all regions, but concentrated in the Central and some provinces in the Northeastern region such as Udon Thani, Nong Kai and Nakhon Phanom. Apart from being consumed as fresh fruits, tomatoes can be processed for exports in the forms of canned fruits, tomato paste (tomato ketchup), concentrated juice, sugar preserved and dried fruits with the earning export income over ten

million U.S. dollars annually (Table 15).

Pepper has its major producing area in Chantaburi province, Eastern region which accounting for 80 percent of the total planted area. Thailand exports ground and unground peppers to the United States, the Netherlands, Germany and Singapore. The export price of pepper varies from year to year depending upon the world market as indicated in Table 16.

**Table 14** Volume and value of sweet bamboo export from Thailand (1985-1990).

Year	Fresh		Dried		Processed		Total	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
1985	761	503	7	26	14,054	6,417	14,822	6,946
1986	225	109	2	6	17,129	9,081	17,356	9,196
1987	195	159	7	15	50,210	37,170	50,412	37,344
1988	127	81	49	93	31,686	21,528	31,862	21,702
1989	34	24	28	136	31,730	18,425	31,792	18,585
1990	138	124	31	143	42,639	27,722	42,808	27,989

volume = ton

value = thousand U.S. dollars

Source : Department of Customs

**Table 15** Volume and value of tomato export from Thailand (1986-1990).

Item	1986		1987		1988		1989		1990	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Fresh tomato	5,731	909	3,753	575	2,556	418	1,538	271	1,707	237
Tomato juice	46	26	28	15	309	204	639	288	757	800
Canned tomato	2	3	-	-	1,454	913	11,981	9,032	13,566	8,303
Tomato paste	14	20	26	32	114	103	129	156	371	389
Total	5,793	958	3,807	622	4,433	1,638	14,287	9,747	16,401	9,734

volume = ton

value = thousand U.S. dollars

Source: Department of Customs

**Table 16** Volume and value of pepper export from Thailand 1986-1990

Year	Grain pepper		Ground pepper		Total	
	Volume	Value	Volume	Value	Volume	Value
1986	1,699	8,123	117	429	1,816	8,552
1987	1,370	6,405	108	548	1,478	6,953
1988	810	3,026	40	184	850	3,210
1989	2,030	5,215	47	136	2,077	5,351
1990	4,020	6,496	23	117	4,043	6,613

volume = ton

value = thousand U.S. dollars

Source : Department of Customs

## CONCLUSION

Fruit and vegetable production in Thailand has a great potential of expansion in view of exporting to developed countries. The expansion of international trade especially the AFTA and GATT agreements together with the advances in technology on food processing have created markets of great potential for fruits and vegetables in Thailand.

If imaginative entrepreneurs with government cooperation can overcome climatic restraints to increase and regularize production of raw materials, and if advanced management techniques are employed to regulate their prices, then export of processed fruits and vegetables may help to alleviate the problems being experienced in the much bigger but troubled rice trade.

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