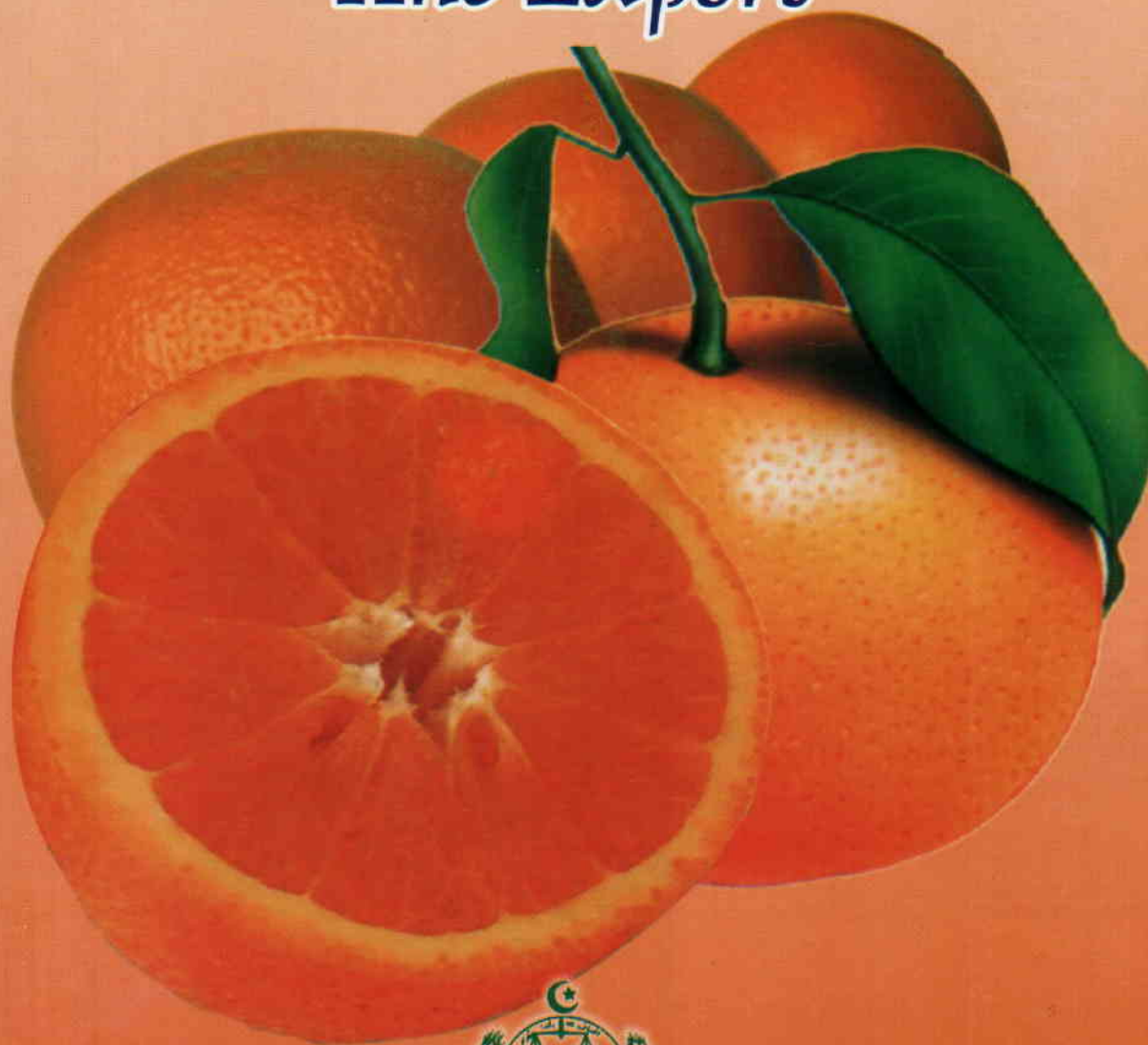


# Kinno Production, Marketing And Export



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# Foreword

Improved Agricultural Marketing Information system is key to the development of Pakistan's Agrarian Economy. Fully cognizant of the fact, Government of the Punjab in Agriculture Department is implementing a Programme for improvement of Agricultural Marketing Information System to facilitate Agribusiness with special emphasis on exports. The objectives are as follows:

- **Collection of data on domestic production to monitor the crop situation to find out estimation Marketable and Exportable Surplus.**
- **To collect information on International Production and Trade.**
- **To provide Information to the policy maker to facilitate export of Agriculture Crop/Produce to find out potential export markets to accelerate export.**
- **Maintenance of database on vital information regarding domestic and International Production, Trade, Consumption needs and quarantine requirements/ standards of Agriculture Crop.**
- **To discuss the WTO issues and Constraints under its regime.**

This report relate to Citrus crop through a planned effort, keeping in view the above objective. Available information is updated, further required data has been collected and processed.

The information collected has been compiled into a booklet form to be used as reference/benchmark by all the stakeholders' viz. producers, processors, traders and exporters to enable them to plan an effective role in the World's production, productivity and export. The efforts made by Mr. Munir Ahmad, Extra Assistant Director of Agriculture (Economics & Marketing) headquarter office & Mr. Muhammad Irfan Bhatti analyses and composition to compile the information is highly acknowledged.

To update the information is regular activities. All the stakeholders can obtain the latest information from the Directorate through toll free telephone Number (0800-51111). Any suggestion for improving the format and the content of this publication would be welcome.



**(Dr. Muhammad Rafiq-ur-Rehman)**  
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## CITRUS PRODUCTION, MARKETING & EXPORT

### INTRODUCTION

Citrus production ranges from northeastern India eastward through the Malay Archipelago and south to Australia. Sweet oranges probably arose in India, the trifoliate orange and mandarin in China, and acid citrus types from Malaysia. Oranges and pummelos were mentioned in Chinese literature in 2400 BC, and later in Sanskrit writings (800 BC) lemons were mentioned. Theophrastus, the Father of Botany, gave a taxonomic description of the citron in 310 BC, classifying it with apple as *Malus medica* or *Malus persicum*. At the time of Christ and shortly thereafter, the term "citrus" arose as a mispronunciation of the Greek word for cedar cones, "Kedros". Alternatively, "citrus" may have arisen through a condensation of "*Callistris*", the name for the sandalwood tree. At this time, citrus fruits were spread throughout Asia, North Africa, and Europe along trade routes. The dissemination was carried out by many cultures, indicating widespread appeal of the fruits at this time. From the first centuries BC to medieval times, orangeries and citrus "groves" were established in Europe, and cultivation became more sophisticated. Columbus, Ponce de Leon, and Juan de Grijavla carried various citrus fruits to the new world in the late 1400's early 1500's. Citrus culture proliferated in Florida in the late 1700's, when the first commercial shipments were made. Right about this time, citrus was introduced to California, although it was much later that commercial production began in the west.

Citrus is a product that offers many advantages in the lifestyles of people who are health conscious, demand convenience, and place a premium on food safety. Continuing improvements in transportation logistics will allow exporters to provide year-round supplies of high quality fresh citrus products, and also allow processed citrus producers to provide convenient, reasonably priced products to consumers throughout the world. These observations mean that world demand for citrus products will continue to expand, and that the long-run outlook for citrus producers remains positive.

The orange is a rich source of protective food ingredients like vitamins A, B, C and calcium and its health-promotion properties emanate from this fact. It is superior to almost any other fruit as a source of calcium. The orange also contains sodium, potassium, magnesium, copper, 'sulphur and chlorine. Its vitamin C content helps the body tissues to use the calcium contained in the food.





Food Value Orange*			Minerals and Vitamins		
Moisture		87.6%	Calcium		26 mg
Protein		0.7%	Phosphorus		20 mg
Fat		0.2%	Iron		0.3 mg
Minerals		0.3%	Vitamin C Small amounts of Vitamin B Complex		30 mg
Fibre		0.3%			
Carbohydrates		10.9%			
		100%			
			Calorific Value - 59		
*Values per 100 gms edible portion					

## World Citrus Variety

### Bearss Seedless Lime

Large fruit, very juicy and seedless. This is the most commonly grown commercial variety. Must be protected from severe frosts. Crop heaviest in fall, although fruit stores on tree finally turning from green to yellow before falling off.



### Mexican Lime

Known as 'Key Lime' in Florida, this is the most tender citrus. Fruit much smaller than 'Bearss' with many seeds. Strong lime flavor and Juicy.



### Rangpur Lime

In reality this orange-colored fruit is a sour mandarin. Its juice combines mellow lime sourness with mild orange flavor. Closed blossoms are purple in color.



### Kafir (Kieffer/Thai/Wild) Lime

Leaves, zest, and juice are used in Thai, Cambodian, and Indonesian cooking. Bumpy fruit. The leaves of the kaffir lime tree are a dark green color with a glossy sheen. The kaffir lime fruit approximates the size of a Western lime. The fruit is dark green in color and has a bumpy surface.



### **Calamondin**

Prized fruit of the Philippines, known as 'Kalamansi'. Small orange fruit, sour in taste, can be used as a lime or to make marmalade. Spectacular ornamental. Upright habit. Early bearing and highly productive.

### **Eureka Lemon**

Produces large crops of fruit all year near the coast. Prune tree to keep compact and to keep from becoming leggy. Has fewer thorns than 'Lisbon'. Handsome as individual specimen or patio container tree.

### **Lisbon Lemon**

Major commercial variety worldwide. Originated in Portugal. Thornier than 'Eureka'. Does well in warmer desert regions and the interior valleys where it tends to fruit year-round.

### **Meyer Lemon**

Thin-skinned fruit that is less tart than 'Eureka' or 'Lisbon'. Plant has a mounding habit. Nearly thornless. Fruits abundantly in winter but can have some fruit most months of the year. Mature fruit turns from yellow to slightly orange in color.

### **Eustis Limequat**

Fruit gets its shape from Kumquat and its flavor from 'Mexican Lime'. Everbearing and highly productive. Somewhat more cold hardy than lime parent. Small foliage. Needs occasional pruning to keep full.

### **Minneola Tangelo**

A tasty hybrid turns bright red-orange color in winter. Fruit must ripen slowly on tree during spring for best tangerine flavor. Very sweet and juicy upon maturity, even in summer months.

### **Dancy Tangerine**

Best known of the Mandarins. Winter-ripening fruit. Easy to peel. Some seeds. Tree has fine foliage and upright habit. Good flavor.



### **Satsuma Mandarin**

Hardest of all mandarins. Seedless and easy to peel. Excellent flavor when ripe in winter months. Stores well when refrigerated but not well on tree. A very slow grower.



### **Clementine Mandarin**

From North Africa. Fruit is spring ripening, is slightly larger than Dancy and has fewer seeds. Yields best production in desert. Also produces well in coastal climates.



### **Fremont Mandarin**

Bright reddish-orange peel, rich flavor, tender and juicy. Some seeds, heavy bearer. Fruit holds well on tree until spring. Where protected from cold, fruit flavor is unsurpassed.



### **Kumquat**

Small orange fruit that are eaten peel and all. Will store on trees for months without loss of flavor. Needs lots of heat to produce very fragrant blossoms in summer. Plant is very cold hardy. Very ornamental with small foliage. Native of China, it is a symbol of prosperity and good luck.



### **Robertson Navel Orange**

Fruit borne in clusters. This navel has excellent flavor even in areas of low summer heat. Early ripening, seedless and a heavy bearer.



### **Washington Navel Orange**

Famous winter-ripening fruit. Excellent in flavor. Seedless, easy to peel, separates into segments. Also good for fresh squeezed juice in winter.



### **Trovita Orange**

Spring ripening. Wide range of climate adaptation. Develops great flavor even in areas of low summer heat such as the coastal areas of California. Few seeds.



### **Valencia Orange**

Summer ripening. The traditional "juice orange", also good for eating. Blooms in spring and has small green fruit first summer which ripen the following summer. Stores well on tree for long periods actually improving in quality.



### **Jaffa Orange**

Also known as 'Shamouti' orange. Grown in Israel. Spring ripening. Fruit is almost seedless, pleasantly sweet and juicy. Easy to peel. Stores well on tree.



### **Sanguinelli Blood Orange**

Rind blushed deep red. Flesh red flecked to beet red. Needs more heat than 'MORO' to sweeten up. Tart spicy flavor. Mostly seedless.



### **Moro Blood Orange**

Rich burgundy color also grow in coastal areas. Very productive, early maturity. Distinctive aroma, exotic berry like flavor.



### **Marsh Seedless Grapefruit**

Best flavor if grown in hot climate locations. Fruits takes 18 months from bloom to ripen. Tree has dense form and rich, green foliage.



### **Rio Red Grapefruit**

Texas hybrid that shows much better color than the traditional 'Ruby'. Best in warmer locations but also performs well near the coast.





**Oro Blanco Grapefruit**

Large white-fleshed hybrid that matures mainly in early spring. Fruit very sweet even when grown in coastal areas with low summer heat. Huge fragrant blossoms in spring. Large glossy-green foliage.

**Star Ruby Grapefruit**

Dark red color is characteristic of this variety, even when grown in cooler coastal regions. Crop heavy in spring, stores well on the tree.

**WORLD CITRUS PRODUCTION**

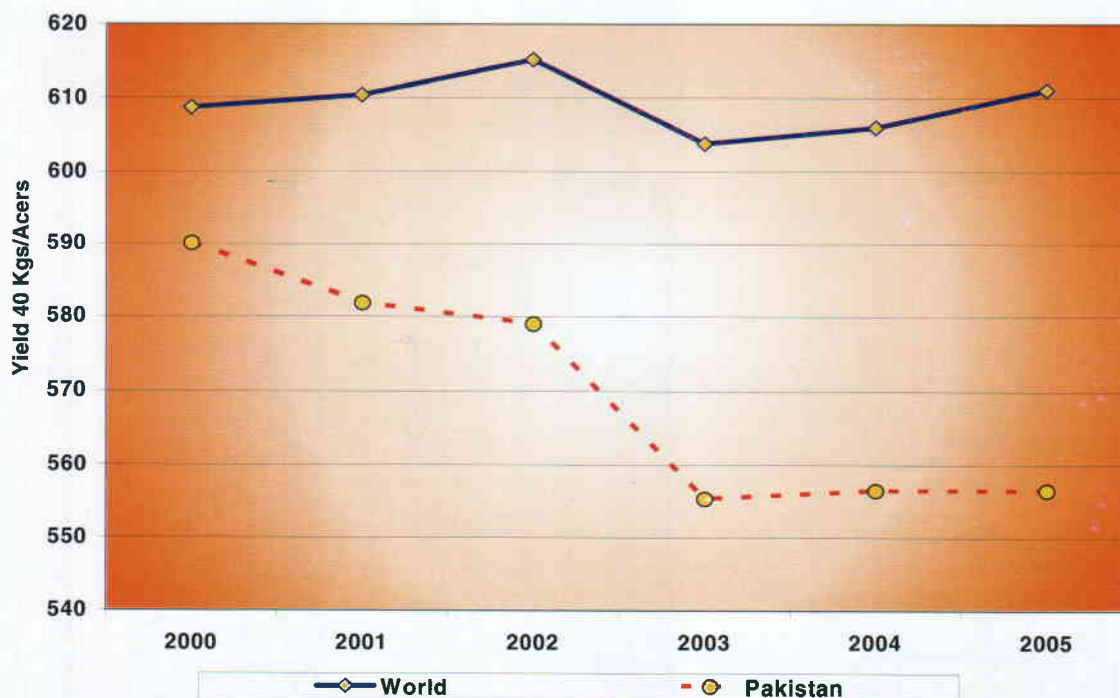
World citrus production and consumption has witnessed a period of strong growth since the mid-1980s. Production of oranges, tangerines, and lemons and limes has all expanded rapidly. Larger production levels have enabled higher levels of total as well as per capita consumption of citrus. Even faster growth has been realized for processed citrus products as improvements in transportation and packaging have lowered costs and improved quality.

**World Production Citrus Fruits 2004-05**

Sr. No.	Countries	Production in (MT)	%age Share
1	Brazil	20,142,100	19.2
2	China	16,019,500	15.2
3	United States of America	10,317,200	9.8
4	Mexico	6,475,411	6.2
5	Spain	4,867,300	4.6
6	India	4,750,000	4.5
7	Italy	3,836,793	3.7
8	Iran, Islamic Rep of	3,825,000	3.6
9	Nigeria	3,250,000	3.1
10	Egypt	2,797,600	2.7
11	Argentina	2,690,000	2.6
12	Turkey	2,587,650	2.5
13	<b>Pakistan</b>	<b>1,670,000</b>	<b>1.6</b>
14	South Africa	1,559,066	1.5
15	Japan	1,370,000	1.3
<b>Sub Total:</b>		<b>86,157,620</b>	<b>82.0</b>
<b>Other 122 Countries</b>		<b>18,920,108</b>	<b>18.0</b>
<b>Grand Total:</b>		<b>105,077,728</b>	<b>100.0</b>

Source: FAO

## Citrus Yield Trend



Source: FAO

**Kinno**

Tangerines (Kinno) differ from oranges because nearly all tangerine production is intended for the fresh market. The major producers of tangerines are China, Spain, and Japan followed by Brazil, Korea, Pakistan, Italy, Turkey, Egypt, the United States, Morocco and Argentina. Spain has had significant success with its seedless Clementine varieties in Europe, and more recently, in the United States. Spain accounts for over 50 percent of world's exports of fresh tangerines. The other major exporters are Morocco and China. Morocco has a well-developed Clementine industry and ships to Europe and the United States.

World tangerine production exhibited strong growth between 1982-84 and 1992-94; increasing at an annual average rate of about 4.2 percent (Annexure-1) Production rose from 8.2 million tonnes in 1982-84 to 12.4 million tonnes in 1992-94. Increased crops in many countries, notably China among developing countries and Spain among developed countries, more than offset a large production decline in Japan.



**Production Tangerines 2004-05**

<b>Sr. No.</b>	<b>Countries</b>	<b>Production (MT)</b>	<b>%age Share</b>
1	China	11,395,000	48.95
2	Spain	1,944,600	8.35
3	Brazil	1,270,000	5.46
4	Japan	1,100,000	4.72
5	Iran, Islamic Rep of	720,000	3.09
6	Thailand	670,000	2.88
7	Egypt	665,000	2.86
8	Italy	661,823	2.84
9	Turkey	585,000	2.51
10	Korea, Republic of	580,000	2.49
11	Argentina	450,000	1.93
<b>12</b>	<b>Pakistan</b>	<b>434,000</b>	<b>1.86</b>
13	Morocco	425,000	1.83
14	United States of America	390,090	1.68
15	Mexico	360,000	1.55
<b>Sub Total:</b>		<b>21,650,513</b>	93.00
<b>Other 46 Countries:</b>		<b>1,630,626</b>	7.00
<b>Grand Total:</b>		<b>23,281,139</b>	100.00

Source: FAO

## CITRUS PRODUCTION IN PAKISTAN

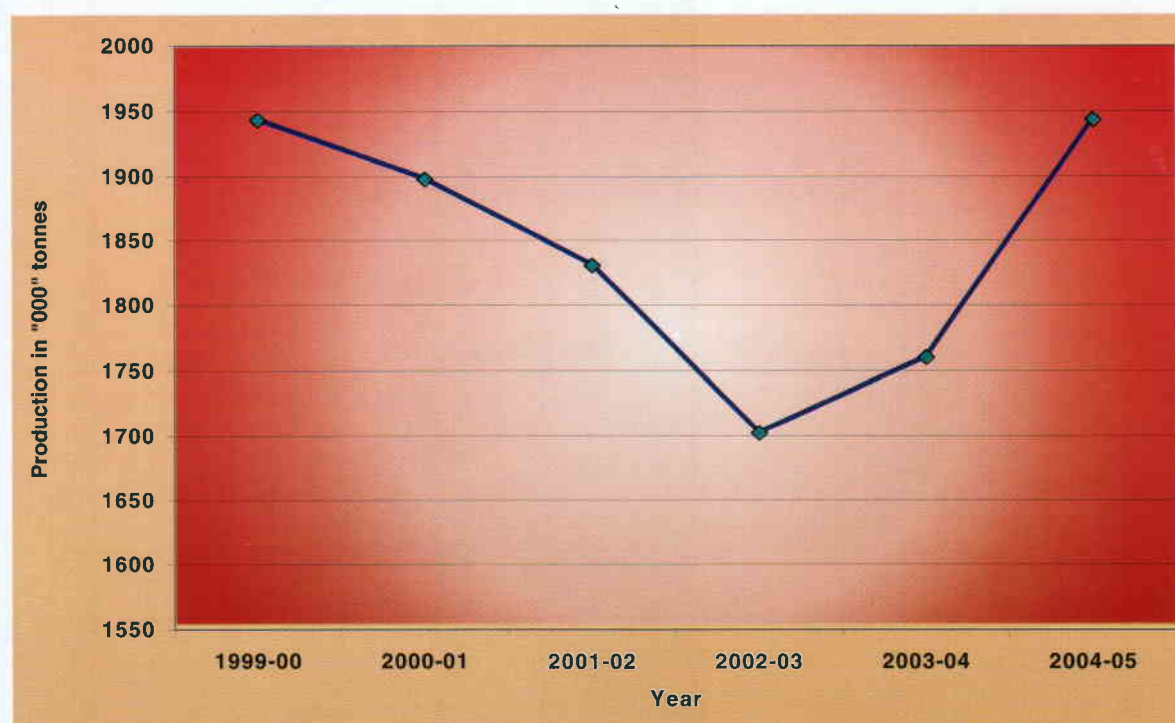
In Pakistan also, citrus fruits are the most important fruit crops grown on the area of 487 Thousand Acres with production of 1.9 Million Tonnes annually. Citrus fruit is grown in all four provinces of Pakistan but Punjab produces over 95% of the crop because of its greater population, favourable growing conditions and adequate water.

### Area and Production of Citrus in Pakistan 2004-05

Province	Area "000" acres	Production "000" Tonnes	% Share
Punjab	422.06	1623.5	95.04
Sindh	10.13	27.7	1.89
NWFP	10.63	38	2.12
Balochistan	5.93	13.1	0.95
Pakistan	<b>448.75</b>	<b>1702.3</b>	<b>100.00</b>

Citrus cultivation in Pakistan has made great strides, particularly from 1960's onward. During the year 1975-80, production was 0.72 Million Tons and was cultivated on 186 thousand acres of land, whereas, during the year 2004-05, citrus fruit was cultivated on 449 thousand acres and production was 1.7 Million Tonnes.

### Citrus Production Trend in Pakistan





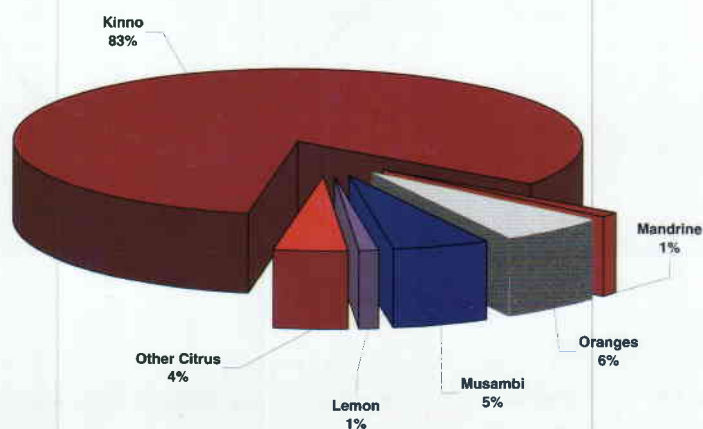
Kinno (Mandarin) was introduced in Punjab from USA in the 1940's and currently Punjab is the center of production and supply of citrus fruits of high quality and grade. Its four varieties are placed into three groups as early, mid and late seasons. Area under different varieties indicates that about 60 per cent of the citrus is covered by kino followed by orange 13 per cent, musambi 12 per cent. The variety wise production of Citrus during 2000-01 is as under: -

### Variety wise Production of Citrus in Punjab

		Area in '000' Acres		Production in '000' Tonnes	
Sr. No.	Variety	Area	Production	%age Share in Production	
1	Kinno	323731	1533977	81.93	
2	Mandrine	7318	20355	1.09	
3	Oranges	32564	117438	6.27	
4	Musambi	29210	99420	5.31	
5	Grap Fruit	826	3126	0.17	
6	Lemon	12673	24440	1.31	
7	Sure Lime	2582	6410	0.34	
8	Sour Orange	1362	4713	0.25	
9	Sweet Lime	14233	41835	2.23	
10	Other Citrus	6317	20532	1.10	
<b>Total Citrus</b>		<b>430816</b>	<b>1872246</b>	<b>100.00</b>	

Source: Crop Reporting Service, Punjab

### Variety Wise Production of Citrus



All the improved varieties are propagated by means of budding on rough lemons or sour orange. Rootstocks are generally grown through seed, T budding/T grafting are the usual method of citrus cultivars propagation. Budding may be done during spring (Feb-March) and autumn (August-October) when bark slip freely from both scion and stock. Bud should be selected from mature wood of productive and healthy trees. In sweet lime propagation through cutting is a common method.

### Major Citrus Growing Areas in Punjab

Citrus is grown in almost all the districts of the Punjab but its 80% production concentrated in following 10 districts

**Area in '000' Acres  
Production in '000' Tonnes**

Sr. No.	District	Total Citrus Fruits		
		Area	Production	%age Share in Production
1	Sargodha	188.052	930.577	49.70
2	T.T. Singh	25.587	110.746	5.92
3	Mandi Baha-u-Din	23.297	82.673	4.42
4	Sahiwal	19.293	77.429	4.14
5	Vehari	15.944	70.363	3.76
6	Khanewal	16.74	69.018	3.69
7	Bahawalpur	18.436	63.463	3.39
8	Multan	13.942	55.221	2.95
9	Okara	13.17	52.279	2.79
10	Jhnag	12.092	45.934	2.45
<b>Sub Total:</b>		<b>346.553</b>	<b>1557.703</b>	<b>83.20</b>
<b>Other 25 District</b>		<b>84.263</b>	<b>314.543</b>	<b>16.80</b>
<b>Grand Total:</b>		<b>430.816</b>	<b>1872.246</b>	<b>100.00</b>

Source: Crop Reporting Service, Punjab

**Major Kinno Growing Areas in Punjab**Area in '000' Acers  
Production in '000' Tonnes

Sr. No.	District	Kinno		
		Area	Production	%age Share in Production
1	Sargodha	163.93	856.58	55.84
2	T.T. Singh	23.52	103.57	6.75
3	Mandi Baha-u-Din	21.31	77.94	5.08
4	Sahiwal	14.05	60.81	3.96
5	Khanewal	13.00	55.80	3.64
6	Vehari	10.94	53.90	3.51
7	Bahawalpur	13.35	49.83	3.25
8	Layyah	8.07	31.62	2.06
9	Okara	7.22	30.99	2.02
10	Multan	6.30	28.92	1.89
<b>Sub Total:</b>		<b>281.67</b>	<b>1349.97</b>	<b>88.00</b>
<b>Other 25 District</b>		<b>42.06</b>	<b>184.01</b>	<b>12.00</b>
<b>Grand Total:</b>		<b>323.73</b>	<b>1533.98</b>	<b>100.00</b>

Source: Crop Reporting Service, Punjab

**WORLD EXPORT OF KINNO**

Most tangerines, however, are consumed in the country of production. Thus the large consumption countries for tangerines are China, Japan, Pakistan and Egypt. Domestic production also supports significant tangerine consumption in Algeria, Mexico, Israel, Australia, Argentina, Paraguay, Bolivia, Cyprus, Jordan, Lebanon, Korea and the United States. The countries of the EU other than Spain, Italy, Greece and Portugal are the main importing countries.

### World Export of Kinno

Sr. No.	Year	Qty.	Value	A.U.P.
1	1999-00	2521350	1435165	569
2	2000-01	3131899	1719738	549
3	2001-02	2996010	1663663	555
4	2002-03	3251889	1910033	587
5	2003-04	3425916	2367713	691

Source: FAO

### Leading Exporters Kinno 2003-04

Spain dominates exports of tangerines with more than 48% share and the success of the Clementine varieties will serve to support its position. China is the second largest exporter of fresh tangerines. Pakistan's position in the export of tangerines is fifth in the world.

Sr. No.	Countries	Quantity		Value	
		Mt	%age Share	1000 \$	A.U.P
1	Spain	1420463	48.88	1321300	930
2	China	300159	10.33	85492	285
3	Turkey	216102	7.44	95559	442
4	Morocco	155804	5.36	115177	739
5	<b>Pakistan</b>	<b>149587</b>	<b>5.15</b>	<b>30411</b>	<b>203</b>
6	Netherlands	88712	3.05	77231	871
7	South Africa	76592	2.64	46229	604
8	Argentina	66479	2.29	32536	489
9	Italy	39078	1.34	26511	678
10	Uruguay	37290	1.28	22905	614
<b>Sub Total:</b>		<b>2550266</b>	<b>87.76</b>	<b>1853351</b>	<b>5856</b>
<b>Other 85 Countries</b>		<b>355790</b>	<b>12.24</b>	<b>263302</b>	<b>62912</b>
<b>Grand Total:</b>		<b>2906056</b>	<b>100.00</b>	<b>2116653</b>	<b>68768</b>

Source: FAO



**Leading Importers Kinno 2003-04**

Sr. No.	Countries	Import Qty.		Import Value	
		Mt	%age Share	1000 \$	A.U.P
1	Germany	350399	12.81	291223	831
2	United Kingdom	314907	11.51	273523	869
3	France	305860	11.18	315317	1031
4	Russian Federation	243515	8.90	103549	425
5	Czech Republic	163312	5.97	36937	226
6	Netherlands	146326	5.35	140049	957
7	Poland	119853	4.38	88648	740
8	Italy	104937	3.84	97446	929
9	Canada	99377	3.63	92151	927
10	United States of America	77296	2.82	140661	1820
<b>Sub Total:</b>		<b>1925782</b>	<b>70.38</b>	<b>1579504</b>	<b>8754</b>
<b>Other 85 Countries</b>		<b>810431</b>	<b>29.62</b>	<b>545515</b>	<b>79567</b>
<b>Grand Total:</b>		<b>2736213</b>	<b>100.00</b>	<b>2125019</b>	<b>88321</b>

Source: FAO

**EXPORT OF CITRUS FROM PAKISTAN**

Pakistan is one of the largest citrus producing countries of the world. There is great demand for Pakistani fresh fruits, particularly in the Middle East and the Gulf states. Unfortunately export of fruits represents only 8 per cent of the total production while Greece, Lebanon, Morocco, Spain and Iran export 50 per cent of their fruit production.

**Export of Kinno from Pakistan**

YEAR	QUANTITY Metric Tonne	VALUE Million Rs.
1999-00	82750	720.57
2000-01	97028	950.35
2001-02	121692	1278.67
2002-03	94806	1268.53
2003-04	149587	1771.34
2004-05	74508	1225.87

Source: Federal Bureau of Statistics, Pakistan

**Export of Oranges from Pakistan**

YEAR	QUANTITY	VALUE
	Metric Tonne	Million Rs.
1999-00	2107	21.84
2000-01	1031	10.85
2001-02	890	12.75
2002-03	247	4.54
2003-04	1672	17.42
2004-05	75	1.41

Source: Federal Bureau of Statistics of Pakistan

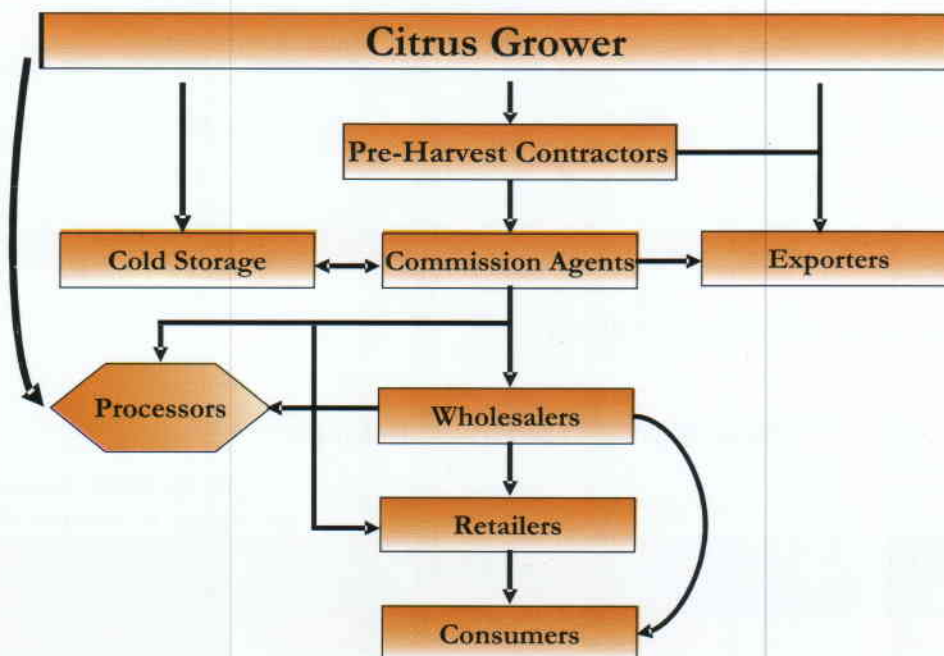
**Major Markets for Pakistani Kinno**Qty in '000' Tonnes  
Value in Million Rs.

Sr. No.	Countries	2004-05		2003-04	
		Qty.	Value	Qty.	Value
1	United Arab Emirates	19659	259	0	0
2	Russian Federation	12848	258	1812	30
3	Saudi Arabia	10752	168	14484	172
4	Indonesia	8532	146	29042	359
5	Philippines	7882	127	15778	180
6	Sri Lanka	2315	45	9115	105
7	Netherlands	2075	45	5611	73
8	Singapore	1837	37	4845	68
9	Bahrain	1416	22	2344	29
10	United Kingdom	1000	16	1317	22
<b>Sub Total:</b>		68315	1123	84347	1038
<b>Other 54 Countries</b>		142821	2349	233934	2809
<b>Grand Total:</b>		<b>211136</b>	<b>3472</b>	<b>318282</b>	<b>3847</b>

Source: FBS

## CITRUS MARKETING CHANNELS

# Marketing Channel For Citrus



## MARKETING MARGINS

Among citrus group "Kinno" takes the maximum share in area, production and marketable surplus of citrus. Kinno is distributed in the market in two forms.

- i. Loose Form
- ii. Packaged (Box/Crate)

While other citrus produce i.e. Orange, Mosumbi, Grape Fruit, Lemon, etc. is distributed in loose form, bags, baskets, crates etc.

Kinno takes 62 – 64% share in production of citrus in Punjab, and marketing margin in Kinno trade in Faisalabad division during 2000-2001 was calculated as following, when marketed in loose form.

### In Marketing Channel – 1

(Grower → P.H Contractor → Comm. Agent → Pharia → Retailer → Consumer).

Total marketing margin	=	42.65% of sale price
Share of pre-harvest contractor	=	28.75% of total margin (14.15% of sale price)
Share of Comm. Agent in margin	=	5.94% of total margin (2.53% of sale price)

Margin of Pharia	=	28.125% of total margin (13.85% of sale price)
Margin of Retailer	=	37.50% of total margin (18.46% of sale price)
Grower's share in consumer rupee	=	57.33% of sale price

### **In Marketing Channel – 2**

(grower → Comm. Agent → Pharia → Retailer → Consumer)

Total marketing margin	=	(30.50% of sale price)
Margin of commission agent	=	8.26% of total margin (2.53% of sale price)
Margin of Pharia	=	39.13% of total margin (12.0% of sale price)
Margin of Retailer	=	52.17% of total margin (16.0% of sale price) (16.6% of consumer price)
Grower's share	=	69.33% of consumer price

### **Trade policy**

- ❖ Reduction in tariffs on Export of citrus and juice.
- ❖ Increasing number of trade disputes arising from bans on citrus Export on phytosanitary grounds.
- ❖ Free Trade Area in the world might have significant impact on world orange juice & Citrus trade.
- ❖ EC's system of tariff-quota, minimum entry price and processing subsidy for citrus criticized.

### **Current issues**

- ❖ Large Asian citrus-producing countries set to increase output (China, India, Pakistan).
- ❖ Consumption of fresh citrus expected to continue to decline in developed countries.
- ❖ Risk of fresh citrus surplus in the medium to long term.

### **MARKETING OF CITRUS UNDER WTO REGIME**

Pakistan's economy has undergone considerable diversification over the years, yet agriculture is the largest sector of the economy. This sector contributes 23 per cent to GDP and employs 42 per cent of total labour force. Most importantly, 67.5 per cent of country's population living in rural areas is directly or indirectly dependent on agriculture for their livelihood. It is also the largest source of foreign exchange earnings by serving as the base sector for the country's



major industries like textiles & sugar, and also contributes to growth by providing raw materials as well as being a market for industrial products. Fruits are a vital part of Pakistan's agricultural exports. Large areas of Pakistan are blessed with an agricultural and ecological environment conducive to the production of nearly 30 types of fruits of which citrus are relatively more common. Among all the fruits, citrus area, production and exports are at the top. About 95 per cent of the citrus area is located in the Punjab. The area under total fruits is 651.8 thousand hectares with a total production and export of 5741.7 thousand tonnes and 6403.2 million rupees respectively.

Of the total area under fruits, 29.55 per cent is under citrus and 60 per cent of it is under kinnow with more than 75 per cent production of total citrus fruits in the country. Under citrus fruits, kinnow area, production and exports are at the top. More than 90 per cent of citrus exports are those of kinnow. Pakistan is among the top ten kinnow (hybrid mandarin) producing and exporting countries. Other major producing and exporting countries of hybrid mandarin are China, Spain, Italy, Morocco, Turkey and United States of America etc.

Our production capacity is 1.8 million tons per season. There are about 84 kinnow processing plants with a processing capacity of 5-10 metric tons per hour, located at Sargodha and Karachi.

Citrus also significantly contributes to employment generation through various activities from production to harvesting and domestic and international marketing. Assuming that all the kinnow produced in the Punjab is domestically marketed, the employment generated from kinnow production and marketing is estimated at about 23.48 million labour days or full time jobs for more than 75 thousand people (about 57 million labour days in production and remaining in marketing sectors).

Kinnow is a hybrid of two citrus cultivars; "King" and "Willow Leaf" and is classified as kinnow mandarin. It was introduced from California to the Punjab Agricultural College and Research Institute, Lyallpur (now University of Agriculture, Faisalabad) in the sub-continent in 1943-44. This "easy peel" citrus has assumed special economic importance and export demand being acknowledged for its high juice content, special flavour, delicious taste and as a rich source of vitamin-C. In per capita terms, the annual availability of citrus is nearly 12.5 kg of which kinnow makes up about 8 kg. A consumption of 8 kg per capita implies the availability of 1206 milligrams of vitamin-c, 1520 milligrams of calcium, 684 milligrams of phosphorous and nearly 16 milligrams of iron, per head during the citrus production season. In the citrus production season, kinnow consumption can make a significant contribution to improve human diet in terms of total micronutrients intake.

Most of the target export markets of Pakistani kinnow are those of developing countries. Only 2.6 per cent of kinnow exports target markets of developed countries, which is due to the emerging demand for seedless kinnow by the developed countries. About 61 per cent of total world exports of oranges and mandarins are of seedless varieties. Unfortunately, Pakistan is not producing seedless kinnow, due to which its target markets are limited and mostly confined to Middle East countries. Some important export markets of kinnow in the world are: Bahrain, Dubai, Kuwait, Oman, Qatar, Saudi Arabia, Indonesia, Malaysia, Afghanistan, Netherlands, Philippines, Singapore, U.K., Vietnam, etc. There is a great need to concentrate in the area of technological improvement like tissue culture technique and genetic engineering, to enhance the production of seedless kinnow, so that we may compete under the WTO regime. Furthermore, our production and export of kinnow have been increased overtime only due to increase in acreage and not due to improvement in technology. Therefore, we should also develop high yielding and disease resistant varieties through technological improvement.

Domestically, they use limited and expensive refrigerated transport facilities, costly packing material of good quality and other inputs needed in citrus processing, and non-availability of credit on easy terms and conditions. All these limitations result in the increased cost of production and also adversely affect quality. The inability of Pakistan's citrus fruit to compete in the expensive markets of the world is due to the unavailability of infrastructure like hi-tech labs for issuing various certificates for health and environmental safety. It is also due to the divergent paths of our citrus with the tastes and preferences of high-price markets. All these factors result in confining our exports to cheaper markets of the world.

Marketing practices are not performed on a scientific basis; that is, the requirement of agreement on application of Sanitary and Phytosanitary (SPS) measures of WTO. Due to its implementation our kinnow exports were rejected in the past because kinnow was packed into wooden boxes, which are prohibited under SPS because they may carry pathogen (pests) across the border. Complaints of pesticide residue are also reported. The SPS agreement is a threat for developing countries like Pakistan because they so far do not have enough modern technology to meet SPS requirements fully. They also do not possess enough resources to import these technologies.

Increasing exports of agricultural products and simultaneously minimising the import of agricultural-based products are some of the objectives of Pakistan's agricultural policy. The WTO has placed numerous challenges as well as created opportunities for Pakistan's agriculture. In the international trade arena, the issues of marketing with established quality and standards have become more pronounced and complicated. Pakistan must prepare itself to make progress in all sub-sectors in order to compete internationally. Hence, urgent efforts are needed to improve international competitiveness by introducing cost effective production

technologies. The WTO regulations can become an opportunity for the citrus exporters, provided they prepare themselves to comply with the specifications needed. The policy support from the government is also equally important in this respect. Studies in Bangladesh and Sri Lanka show that the initial costs of compliance with SPS measures are quite high, but once the infrastructure is established, the return will be much higher than the costs incurred. Pakistan has to make necessary investment to comply with the export requirements under WTO; otherwise it is quite likely that we may lose our existing markets. Therefore, well co-ordinated efforts among research departments, the Export Promotion Bureau and exporters are needed to achieve the potential by exporting good quality fruit at high prices by providing all necessary certifications. It is suggested that in Sargodha, citrus exports zone may be established where all necessary infrastructure like cold stores, refrigerated transport, financial institution, SPS certify laboratories, marketing information analysis department, etc. are available.

Analysis on whether citrus growers of the Punjab were protected or not through the trade and pricing policies revealed that the kinnow producers were marginally unprotected. Hence, there are good possibilities of substantial gains from free trade, provided the infrastructure related to the WTO requirements is provided in the area on priority basis. The resource cost ratio (RCR) analysis revealed that kinnow producers of the study area (Sargodha district) are economically efficient from society's point of view. This means that with the freeing up of trade and removing distortions in the domestic markets, effective incentives for citrus cultivation would substantially increase. Therefore, it can be concluded that farmers in the Punjab have a comparative advantage of producing world-class citrus fruit for export as in the past they were unprotected from trade and pricing policies of the government. The only concern is the provision of necessary infrastructure needed for international trade in the WTO perspective.

We have a comparative advantage in terms of kinnow prices. Our kinnow export price is less than the average international mandarin price and lower than that in major mandarin exporting countries. According to some FAO studies, it is expected that prices of fruits and vegetables will rise in future, that is, the incentive for kinnow producers to grow and to raise its exports. The need of the hour is that we should adopt new technology to meet international requirements. We should produce seedless citrus varieties; adopt scientific techniques to perform various marketing activities and to reduce post harvest losses, in order to line with international competitive marketing systems.

## **MARKETING PROBLEMS**

1. Citrus has short shelf life, while Kinno among citrus has comparatively lesser shelf life that reduces negotiation power of the grower for better price.
2. Lack of cold storages, if available at high cost.

3. Lack of processing industry.
4. Technical know-how is not available with growers for processing and preparation of fruit for export.

### **POLICY DECISIONS REQUIRED TO BOOST UP THE EXPORT OF CITRUS FROM PAKISTAN**

- ❖ Export of Citrus Fruits would be not allowed in **open top** and **non-refrigerator containers**. Moreover, the export by sea launches would be banned completely to help ensure quality and value added export of citrus fruits.
- ❖ **Un-processed and non-waxed** export of Citrus Fruits would be not allowed in any case.
- ❖ All the exporters would adopt **standard packing** with uniform dimensions and standardized net weight of 8 kilograms for the wooden crate and 10 Kgs. in case of a carton.
- ❖ **Quality packing and grading** would be monitored and supervised by mutual agreement between exporters. The expenditure in this regard would be borne by the exporters. To enforce this the issuance of Quarantine Certificate would be made pre-requisite for the above monitoring process.
- ❖ Export of Citrus Fruits would not be allowed until and unless fruit is properly ripened. **Parameters/Standards for ripened** fruit would be developed and designed by exporters and Agriculture Department, Punjab mutually.
- ❖ Improvement in capacity and quality of cold storage by modernization of the same may be done. Subsidy on import on machinery required to modernize cold storage may be given due consideration.

### **PROPOSED PROMOTIONAL MEASURES FOR EXPORT OF CITRUS FRUITS**

- ❖ Arrangements for reasonable **working capital** limit for export of citrus fruits from the Commercial Bank
- ❖ Import of **duty free Wax** for Citrus Export
- ❖ Export Promotion Bureau should publish a standard **BROCHURE** on Kinno in more than one language.
- ❖ EPB should prepare a proper **VIDEO DOCUMENTARY** on export promotion of Kinno
- ❖ **Exhibitions** on Kinno should be organized in key international markets by the EPB.
- ❖ **Delegations** should be sent to prominent and promising Kinno importing countries. The composition of the delegations, countries to be visited and periods of visit would be finalized by the EPB upto 15<sup>th</sup> November 1999.



- ❖ Special efforts may be made to **export Kinno to Saudi Arabia during Haj days**, Exporters should prepare Haj Plan to formulate a package by the Government to increase export of Kinno during Haj Days
- ❖ **Training Workshop of exporters** and refer containers companies may be organized by EPB to facilitate resolving of problems through mutual interaction and understanding for improving container service facilities.
- ❖ **Training on various aspects of export of Citrus Fruits** especially for Kinno should be arranged by the SMEDA in collaboration with EPB at Lahore.
- ❖ Agriculture Department Punjab should arrange a **meeting of exporters with the local/district administration** and relevant organizations for mutual understanding for solving day to day problems at local levels efficiently and effectively.
- ❖ The Punjab Government would **award trophies** to the leading exporters of citrus fruits on merits at appropriate occasion.

# **Agricultural Marketing Government of the Punjab**

## **INTRODUCTION**

The Agricultural Produce Markets Act, 1939 was promulgated on the recommendation of Royal Commission constituted by the British India Government during 1927. The sole-intention of the act was to regulate the Agri. Business so as to do away the evils and vices which ultimately tended to the deprivation of the grower from his fair return of his produce. The market committees were established under the provisions of above said act which were assigned noble pursuit i.e. Safeguard the interest of grower.

The Act of 1939 was replaced by the Punjab Local Government Act, 1975, but for legal and technical reasons, the provisions of the act could not be enforced. Later, the relevant provisions of the Punjab Local Government Act, 1975 were replaced by the Punjab Agricultural Produce Markets Ordinance (PAPMO), 1978 and rules were framed during 1979.

## **VISION OF AGRICULTURAL MARKETING:**

To increase profitably of the growers through modern marketing infrastructure, competitive marketing environment and entrepreneurial capacity building

## **FUNCTION:**

- Managing 325 Agricultural Markets in Punjab including Grain, Fruit & Vegetable and Feeder Markets
- Supervision of 133 Market Committees in Punjab
- Establishment of New Markets
- Collection and dissemination of marketing information
- Release of Daily Price Bulletin through Electronic & other Media
- Economics of Crop and Price analysis report on various Crops
- Survey and studies
- Monthly Price and Corps situation report on various Crops
- Supervision of Sunday/Friday Bazaars
- Supervision of Ramzan/Sasta Bazaars

## **MARKET COMMITTEES IN PUNJAB**

Market committees is a corporate body established under section 7 of the PAPMO, 1978, Exercising control on sale/purchase of Agricultural produce in its area notified under section 4 of the said Ordinance

## **DUTIES OF MARKET COMMITTEES**

To enforce the Provisions of Ordinance and Rules

To Establish Agricultural Produce Markets

Collection and dissemination of prices of agricultural produce

Coordination with District Administration for organizing Sunday/Friday Bazaars/Ramzan/Sasta

## **INITIATIVES FOR IMPROVEMENT OF AGRICULTURAL MARKETING**

A separate ministry of agricultural marketing has been created

A CORPORATE BODY "Punjab AgriMarketing Company" (PAMCO) has been established for improvement of agricultural marketing with private sector

Participation

Agricultural Marketing Information System (MIS) has been established, Website [www.punjabagmarket.info](http://www.punjabagmarket.info) has been launched

Toll free No.0800-51111 has been installed

Establishing the markets under private sector allowed for healthy competition with public sector

Existing Agricultural Produce Markets Laws are being revamped

A Task Force has been constituted to guide formulation of policies for improvement of Agricultural Marketing

Creating awareness and compliance of WTO agreement

Infrastructure in existing 30 markets in being upgraded

Cold chain is being established to maintain quality of exportable perishable commodities in producing area under PAMCO

Training programme for growers, commission agents and other dealing in agricultural produce especially fruit & Vegetable being arranged

Importers and potential investors from other countries are being encouraged to boost export and enhance investment

Workshops, seminars, conferences to create awareness about the Agricultural Marketing System

Agreement/protocols and MOUs on Phytosanitary Requirements for Export of Rice, Citrus and Mango have been signed between MINFAL and AQSIQ.