SOCIAL SCIENCES & HUMANITIES

Strategic Policies for Increasing the Competitive Powers of Indonesian Horticultural Products in ASEAN Markets

Etty Soesilowati[1]*, Sucihatiningsih Dian Wisika P[1], Lailawati Mohd Salleh[2] and Rahim Md. Sail.[3]

[1]*Department of Economics, Semarang State University, Kota Semarang, Jawa Tengah 50229, Indonesia*
[2]*Department of Management and Marketing, Faculty of Economics and Management,*
Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia
[3]*Professional Development and Continuing Education, Faculty of Educational Studies,*
Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia

ABSTRACT

The objectives of this study were to: (1) analyse the competitiveness of Indonesian fruits featured in ASEAN markets, (2) understand the marketing distribution of featured fruits from Indonesia, (3) analyse the policies and the strategies of the Indonesian government in relation to horticultural products, and (4) suggest a bill aimed at increasing the competitive power of Indonesian featured fruits. The Revealed Comparative Advantage (RCA) and the Specialized Trade Index (STI) show that there are five Indonesian featured fruits that possess good competitiveness, namely avocados, mangoes, mangosteens, watermelons and melons. The Intra-Industry Trade (IIT) index shows that bananas, watermelons, melons and durians are good for *imperfect market competition due to the* existence of *greater returns to scale*. The IIT also shows that avocadoes, mangoes and mangosteens are more suitable for *perfect market competition*, where the abundance of a product constitutes a very important factor, and trading is mainly determined by comparative superiority. Further, this research found three patterns of marketing distribution for these featured fruits: (1) farmer - consumer, (2) farmer - trader - outlet – consumer, and (3) farmer - distributor - outlet - consumer. This study also found that continuous supply of Indonesian featured fruits very uncertain, and suggestions have been made to increase R & D. Finally, it recommended that the Indonesian government develop integrated and efficient production centres for the distribution of these featured fruits. Such production centres might then reinforce institutionalisation at the level of farmers.

Keywords: Policies, Competitive advantage, Horticulture, Indonesia

INTRODUCTION

Horticultural products are potential commodities with high economic value and market demand. Indonesia's diverse climate encourages the production of tropical and sub-tropical horticultural products: 60 fruit commodities, 80 vegetable commodities, 66 bio-farming commodities, and 117 ornamental plant commodities.

The establishment of the ASEAN Economic Community in 2015 provided a huge opportunity for ASEAN countries to tap into a massive market worth about USD 2.6 trillion. However, at present, the competition between domestic and imported horticultural products in Indonesia is intense. The export and import figures for selected featured fruits in Indonesia for 2014 are shown in Table 1. With regard to the potential market for horticultural products, the Indonesian government, through the Ministry of Trade, has embarked on strategies to increase exports of horticultural products, particularly exotic fruits, with a targeted sales growth of between 14.5% and 15.5% in 2016 (Agriculture Department, Central Java, Indonesia, 2014).

Table 1
Export and Import of Indonesian Superior Fruits in 2014

Months	Export		Import	
	Values in US$	Weights in Kg	Values in US$	Weights in Kg
January	14,472,285,648	49,154,384,703	14,916,227,693	11,590,996,964
February	14,634,090,390	43,399,680,728	13,790,661,990	10,640,029,636
March	15,192,634,701	49,294,958,689	14,523,719,412	11,439,923,450
April	14,292,472,554	45,541,731,344	16,254,976,317	13,005,419,405
May	14,823,602,661	47,417,633,575	14,770,336,777	12,197,088,101
June	15,409,451,765	44,989,016,798	15,697,742,441	12,811,352,690
July	14,124,129,298	43,624,670,282	14,081,710,235	11,541,376,167
August	14,481,642,319	43,484,947,226	14,793,236,965	11,676,185,855
September	15,275,846,089	46,043,270,707	15,546,096,309	13,158,825,424
October	15,348,970,137	43,705,129,574	15,327,994,527	13,184,342,274
November	13,616,232,861	46,182,202,132	14,041,607.926	12,258,277,328
Total	161,671,358,423	502,837,625,758	163,744,310,592	133,503,817,294

Source: Suryamin (2014)

The intense competition may be due to several factors: (1) imported fruits are cheaper than domestic ones; (2) the supply of imported fruits is throughout the year; (3) the appearance of imported fruits is more attractive than the domestic ones; and (4) the distribution network for imported fruits is well connected and well-managed, beginning from the distributors to the end users. In order to reap better profits, the local featured fruits must have a greater competitive edge which would require the active role of the Indonesian government in order to achieve this.

Thus, this study was aimed at achieving the following goals: (1) To analyse the economic potential of Indonesian horticultural products; (2) To identify the existing marketing distribution models for Indonesian horticultural products; and (3) To provide suggestions and recommendations for increasing the competitive power of Indonesian featured fruits.

Background

The term "horticulture" is derived from the Latin words *hortus* (garden plants) and *cultura/colere* (cultivation). Hence, the literal meaning of "horticulture" is the cultivation of garden plants. However, this term is now being used more broadly to include other plants. At present, horticulture can be defined as one of the methods for modern farming. It focuses on the cultivation of fruits (fruit culture), flowers (floriculture), vegetables (olericulture), medicine (bio-farming) and garden (landscape) plants.

Indonesia's tropical climate enables producers to grow a great variety of horticultural commodities, primarily vegetables, fruits and ornamental flowers. The diversity and exotic nature of Indonesian fruits can be leveraged to compete with similar products from other countries in the global market. There are two kinds of Indonesian fruits in the global market: fresh and processed. At present, the market share of Indonesian processed fruit products (canned and juice) in the global market is approximately 4% (US$ 138.03 million), placing it in the fifty-first (51st) position of the total demand for processed fruits with a total value of US$3,450.75 million.

A study by Soesilowati (2011) showed that conditions in the country are conducive for the fruit industry, as measured by the ROI (returns on investments), net revenue and payback periods (see Table 2).

Table 2
An analysis of Profitability of Cultivating Longan, Dragon fruit, Durian and Mango

Descriptions	Types of Commodities			
	Longan fruit, 4,000 trees	Dragon fruit 40,000 trees	Durian, 2,800 trees	Mango, 4,000 trees
Profitability	USD 60,000	USD 60,000	USD 405,000	USD 120,000
Operating Costs	USD 175,220.5	USD 175,220.5	USD 111,696.8	USD 142,180.
Benefit/Cost	0.34	0.34	3.62	0.337
Return on investment	34%	34%	362%	33.7%
Payback Periods	2.9 years	2.9 years	4.3 years	2.9 years

Source: Soesilowati (2011)

Strategies to Improve Fruit Exports

The Indonesian government recently implemented a policy on the import of horticultural products to protect domestic fruits. This has had a positive effect on the Farmers' Exchange Rate, where the selling price of domestic fruits received a boost. The Farmers' Exchange Rate is the ratio of the price index received by farmers to the price index paid by them. It is an indicator of the value of farm production compared with the price of cost of living. The Farmers' Exchange Rate in the farming sub-sector has increased as a result of an increase in the receivable index of farmers (0.72%), which is higher than their payable index (0.12%). The increase in the receivable index is the result of an increase in the price index of fruits (0.96%) (Soesilowati, 2011).

Since fruits are perishable items, it is necessary to have an effective supply chain management (SCM), beginning from the management of the related processes at the source through every point in the supply chain to the user. An analysis of the SCM should focus on the: (1) cultivation of raw materials to produce the products, (2) transformation of the raw materials (harvest and post-harvest management), (3) processing industries, and (4) delivery of products to end users through the distribution channels. Therefore, SCM requires not only GAPs (Good Agricultural Practices) but also GHPs (Good Handling Practices), GMPs (Good Manufacturing Practices) and GTPs (Good Trading Practices).

Some factors which determine a successful SCM are policies, human resources, infrastructure, technology, institutions, capital, information systems, socio-cultural aspects and other related activities in the supply chain. The application of a SCM therefore consists of five main functions: process, information flow, funding, services and activities (Springer-Heinze, 2008).

The institutionalisation of businesses is yet another strategy that can increase the competitive power of fruit exports. Strong institutions should be developed, not only for reinforcing horizontal cohesion among business actors within an internal supply chain, but also for reinforcing vertical integration between business actors within an internal supply chain with other business actors in other supply chains (Sulandjari, 2011). Horizontal cohesion, for example, involves good cooperation among farmer groups or among trading groups, whereas vertical cohesion involves good cooperation between farmer groups and trading groups or among different groups of professions.

METHODS AND INDICES

This research was conducted at 12 fruit production centres in Indonesia. Data were collected from documents, photographs, audio-visual records and other relevant sources, and were then used for calculating the indices and to examine the existing marketing strategy in terms of the distribution system. Data analysis was performed to determine the RCA (Revealed

Comparative Advantage) index, the STI (Specialized Trade Index) and the IIT (Intra-Industry Trade) index.

Revealed Comparative Advantage (RCA) Index

The RCA index is based on the consideration that the export performance of a country is determined by the competitive power of a product from the country compared with the same product from another country (or countries), assuming (*ceteris paribus*) that all other factors influencing the exports remain unchanged. According to Tambunan (2004), when the export of a commodity by a country (country I, for instance) has a higher percentage compared with the export of the same commodity by all the other countries, then the country (country I) is said to have a comparative advantage in both the production and the export of the commodity. The RCA can be formulated as follows:

$$RCA = XIKXM/XWKXWM$$

XIK = export value of commodity I by country K

XM = total export of country K

XWK = world export value for commodity I

XWM = total export value of the world

When the RCA index for a commodity is higher than 1, then the commodity has a relatively good competitive power. Conversely, when the RCA index for a commodity is less than 1, then the commodity has less competitive power.

Specialized Trade Index (STI)

The STI can be used to find out whether a commodity has the potential either to be exported or imported. Therefore, the STI can be used for determining the stages of both the industrialisation processes and the trading practices of any country. The STI is also able to monitor whether a product has become saturated (there is no room for further growth) or is still in its growing phase. The value of the STI ranges from -1 to +1. When a product has a positive value (0 to 1), then the product has a strong competitive power and may become an export commodity, (domestic supply is higher than domestic demand). Conversely, when a product has a negative value (0 to -1), then the product has a low competitive power which means the product will need to be imported (domestic supply is lower than domestic demand).

The variations in the comparative advantage of a product relative to either its export or import potential can be formulated as follows:

$$STI = Xji\text{-}MijXij + Mij$$

STI = Specialized Trade Index for:

Xji = export value of commodity *i* by country *j*,

Mij = import value of commodity *i* by country *j*.

Intra-Industry Trade (IIT) Index

The Intra-Industry Trade index (IIT) is defined as a trade, where an export value by a country for an industry is exactly equalised by that of another country for the same industry. An IIT index approaching zero would mean that the trade is suitable in *perfect market competition*, where product abundance is a very important factor, and trade is based on a comparative advantage. An IIT index of exactly zero means that the trade should be practised where there is imperfect market competition due to increasing returns to scale. The Grubel - Lloyd (1975) index is used to calculate the IIT index for a country as follows:

IIT I = 1 - Xji-$MijXij$ + Mij

IIT I = Intra-Industry Trade Index,

Xji = export industry i to country j,

Mij = import industry i to country j.

RESULTS AND DISCUSSION

Potential of Indonesian Superior Fruits

The Indonesian government, through the Ministry of Trade, works on the potential of domestic horticultural products, particularly fruits, for export. It has projected an export growth ranging from 14.5% to 15.5% with the support of the Agriculture Department of Central Java, Indonesia (2014). Several exotic fruits have been selected out of 60 fruit species in Indonesia such as avocadoes, durians, mangoes, mangosteens, melons, bananas, and watermelons. The cropping areas, the production and the productivity of these seven species of fruits are shown in the following tables.

Table 3
Cropping Areas (in hectares) for Indonesian Featured Fruits

No	Commodity	2009	2010	2011	2012	2013
1	Avocado	19,979	20,507	21,653	20,989	22,214
2	Durian	61,849	46,290	69,045	63,189	61,246
3	Mango	215,387	131,674	208,280	219,667	247,239
4	Mangosteen	11,990	10,231	16,180	17,850	18,200
5	Banana	119,018	101,276	104,156	103,158	103,449
6	Watermelon and melon	37,719	32,865	39,788	40,122	39,278

Source: Agriculture Department, Central Java, Indonesia (2014)

Table 4
Production (in tons) of Indonesian Featured Fruits

No	Commodity	2009	2010	2011	2012	2013
1	Avocado	257,642	224,278	275,953	294,200	289,893
2	Durian	797,798	492,139	883,969	888,127	759,055
3	Mango	2,243,440	1,287,287	2,131,139	2,376,333	2,192,928
4	Mangosteen	105,558	84,538	117,595	190,287	139,602
5	Banana	6,373,533	5,755,073	6,132,695	6,189,043	6,279,279
6	Watermelon and melon	560,188	433,792	601,490	640,952	585,835

Source: Agriculture Department, Central Java, Indonesia (2014)

Table 5
Productivity of Indonesian Superior Fruits (100 Kilogram / Hectare)

No	Commodity	2009	2010	2011	2012	2013
1	Avocado	129,00	109,40	127,44	140,14	130,50
2	Durian	129,00	106,30	128,02	140,55	123,94
3	Mango	104,20	97,80	102,32	108,17	88,70
4	Mangosteen	88,00	82,60	72,67	106,60	76,70
5	Banana	535,50	568,30	588,79	599,95	606,99
6	Watermelon and melon	148,50	132,00	151,80	159,70	149,15

Source: Agriculture Department, Central Java, Indonesia (2014)

The data above shows the productivity of avocadoes, durians, mangoes, mangosteens and bananas increased by 10.2%, 9.3%, 5.8%, 47.2% and 1.8% respectively (2009 to 2013).

Analysis of Competitive Powers

An analysis of the competitive powers of the seven exotic fruits from 2009 to 2013 showed the following results (Table 6):

Table 6
Competitive Powers of Indonesian Exotic Fruits based on STI

Year	Banana	Avocado	Mango	Mangosteen	Watermelon	Melon	Durian
2009	0,101	0,814	0,265	0,998	-0,304	-0,618	-1,000
2010	-0,990	0,739	-0,061	0,998	-0,923	-0,533	-0,998
2011	-0,977	0,767	0,201	0,997	-0,663	-0,152	-1,000
2012	-0,928	0,251	0,180	1,000	-0,242	-0,152	-1,000
2013	-0,541	0,997	0,803	1,000	0,995	0,976	-1,000

Source: Agriculture Department, Central Java, Indonesia, (2014)

It can be seen in Table 6 that the products that had positive indices for the Specialized Trade Index were avocadoes, mangoes and mangosteens, where watermelons and melons only had a positive index in 2013. This means that the exports of these five products were higher than their imports. Bananas and durians had a negative STI, which means that the exports of these two fruits were lower than their imports. This means that the production and quality of these two fruits were low. Though a large acreage was allocated for cultivation of durians and bananas, the low level of exports for these fruits is suspected to be due to their lower quality compared with the imported

fruits. Therefore, it is the duty of the Indonesian government to help increase the quality, quantity and ensure the continuous supply of Indonesian fruits to enable these products to compete strategically in international, and particularly, in ASEAN markets.

An analysis using the STI for bananas also revealed that bananas had a positive index in 2009, when exports exceeded imports. However, from 2010 to 2013, the STI for bananas decreased drastically to almost minus 1. This is an indication that this product could be an export potential if there are efforts to ensure its quality is at par with the imported ones.

Table 7

Analyses on Indices for Intra-Industrial Trade for Indonesian Fruits

Year	Banana	Avocado	Mango	Mangosteen	Watermelon	Melon	Durian
2009	0,899	0,186	0,735	0,002	1,304	1,618	2,000
2010	1,990	0,261	1,061	0,002	1,923	1,533	1,998
2011	1,977	0,233	0,799	0,003	1,663	1,152	2,000
2012	1,928	0,749	0,820	0,000	1,242	1,152	2,000
2013	1,541	0,003	0,197	0,000	0,005	0,024	2,000

Source: Agriculture Department, Central Java, Indonesia (2014)

Table 7 above shows that bananas, watermelons, melons and durians had IIT (Intra-Industry Trade) indices that were higher than 1, thus indicating that these four commodities are suitable for imperfect market competition due to greater returns to scale. On the other hand, avocadoes, mangoes and mangosteens had IIT indices of zero or approaching zero, thus, indicating

that these fruits are more suitable for perfect market competition, where product abundance is a very important factor and trade is based on comparative advantage.

The analysis using the RCA index showed that avocados, bananas, mangoes, mangosteens, durians, and watermelons from Indonesia had competitive powers, as shown in Tables 8 to 13.

Table 8
Analyses on Indices for Intra-Industrial Trade for Indonesian Fruits

Year	Indonesian Avocado Export to ASEAN (kg) (Xij)	Total Indonesian Export to ASEAN Countries (kg) (Xtj)	ASEAN Avocado Export to Indonesia (kg) (Xiw)	Total ASEAN Export to Indonesia (kg) (Xtw)	Xij/Xtj	Xiw/Xtw	RCA
2009	65	24,623,898	160	199,561,320	2.64E-06	8.01759E-07	3.292403
2010	68	33,347,509	247	263,328,091	2.04E-06	9.37993E-07	2.173931
2011	78	42,098,910	236	310,223,221	1.85E-06	7.60743E-07	2.435488
2012	72	41,831,096	291	325,327,521	1.72E-06	8.94483E-07	1.924248
2013	278	40,629,939	638	330,512,805	6.84E-06	1.93033E-06	3.544592

Source: Agriculture Department, Central Java, Indonesia (2014)

The RCA for avocadoes in the ASEAN markets from 2009 to 2013 showed a positive index that was greater than 1, and in 2013, this index was 3.54. Thus, it is clear that Indonesian avocadoes have a competitive power in ASEAN markets.

Table 9
RCA Indices for Bananas

Year	Indonesian Banana Export to ASEAN (Kg) (Xij)	Total Indonesian Export to ASEAN Countries (Kg) (Xtj)	ASEAN Banana Export to Indonesia (Kg) (Xiw)	Total ASEAN Export to Indonesia (Kg) (Xtw)	Xij/Xtj	Xiw/Xtw	RCA
2009	16	24,623,898	28,473	199,561,320	6.5E-07	0.000142678	0.004554
2010	13	33,347,509	31,046	263,328,091	3.9E-07	0.000117899	0.003307
2011	35	42,098,910	35,173	310,223,221	8.31E-07	0.00011338	0.007333
2012	37	41,831,096	46,327	325,327,521	8.85E-07	0.000142401	0.006211
2013	109	40,629,939	638	330,512,805	2.68E-06	1.93033E-06	1.389786

Source: Agriculture Department, Central Java, Indonesia (2014)

The RCA index for bananas has always been less than 1 since 2009, except in 2013 when it reached 1.39. This showed that the commodity was unable to fulfil export requirements, but it picked up in 2013.

Table 10
RCA Indices for Bananas

Year	Indonesian Mango & Mangosteen Export to ASEAN (Xij)	Total Indonesian Export to ASEAN Countries (Xtj)	ASEAN Mango & Mangosteen Export to Indonesia	Total ASEAN Export to Indonesia (Xtw)	Xij/Xtj	Xiw/Xtw	RCA
2009	938	24,623,898	19,348	805,241,419	3.81E-05	2.40276E-05	1.58539
2010	649	33,347,509	25,539	1,051,786,118	1.95E-05	2.42816E-05	0.801502
2011	1810	42,098,910	33,527	1,244,568,991	4.3E-05	2.69386E-05	1.595997
2012	1868	41,831,096	61,439	1,254,690,329	4.47E-05	4.89675E-05	0.911948
2013	3806	40,629,939	97,057	1,271,324,185	9.37E-05	7.63432E-05	1.227021

Source: Agriculture Department, Central Java, Indonesia (2014)

The analysis of the RCA index for mangoes and mangosteens showed that the index fluctuated between 0 and 1.5.

Table 11
RCA Indices for Durians

Year	Indonesian Durian Export to ASEAN (Kg) (Xij)	Total Indonesian Export to ASEAN Countries (Kg) (Xtj)	ASEAN Durian Export to Indonesia (Kg) (Xiw)	Total ASEAN Export to Indonesia (Kg) (Xtw)	Xij/Xtj	Xiw/Xtw	RCA
2009	0	24,623,898	24,242	199,561,320	0	0.000121476	0
2010	13	33,347,509	21,296	263,328,091	3.9E-07	8.08725E-05	0.00482
2011	0	42,098,910	30,295	310,223,221	0	9.76555E-05	0
2012	5	41,831,096	23,557	325,327,521	1.2E-07	7.24101E-05	0.001651
2013	0	40,629,939	15,283	330,512,805	0	4.62403E-05	0

Source: Agriculture Department, Central Java, Indonesia (2014)

Durians from Indonesia did not possess any competitive power, as shown by their RCA indices, which were always less than 1. This means that Indonesia has not been able to produce durians in sufficient quantities. In order to satisfy domestic consumption, Indonesia had to import durians from other countries.

Table 12
RCA Indices for Watermelon

Year	Indonesian Watermelon Export to ASEAN (kg)	Total Indonesian Export to ASEAN Countries (kg)	ASEAN Watermelon Export to Indonesia (Kg)	Total ASEAN Export to Indonesia (Kg)			
	(Xij)	(Xtj)	(Xiw)	(Xtw)	Xij/Xtj	Xiw/Xtw	RCA
2009	224	24,623,898	7,467	199,561,320	9.1E-06	3.74171E-05	0.24312
2010	21	33,347,509	8,752	263,328,091	6.3E-07	3.32361E-05	0.018947
2011	39	42,098,910	8,920	310,223,221	9.26E-07	2.87535E-05	0.032218
2012	169	41,831,096	8,926	325,327,521	4.04E-06	2.7437E-05	0.147249
2013	409	40,629,939	9,722	330,512,805	1.01E-05	2.94149E-05	0.342223

Source: Agriculture Department, Central Java, Indonesia (2014)

The RCA index for watermelons has been less than 1 since 2009, which strongly indicates a lack of comparative advantage to compete in the regional market.

Table 13
RCA Indices for Melons

Year	Indonesian Melon Export to ASEAN (Kg)	Total Indonesian Export to ASEAN Countries (Kg)	ASEAN Melon Export to Indonesia (Kg)	Total ASEAN Export to Indonesia (Kg)			
	(Xij)	(Xij)	(Xiw)	(Xtw)	Xij/Xtj	Xiw/Xtw	RCA
2009	102	24,623,898	1992	199,561,320	4.14E-06	9.98189E-06	0.414983
2010	280	33,347,509	2446	263,328,091	8.4E-06	9.28879E-06	0.903931
2011	318	42,098,910	2496	310,223,221	7.55E-06	8.04582E-06	0.938828
2012	568	41,831,096	2894	325,327,521	1.36E-05	8.89565E-06	1.526411
2013	180	40,629,939	3360	330,512,805	4.43E-06	1.0166E-05	0.435788

Source: Agriculture Department, Central Java, Indonesia (2014)

The RCA index for melons seemed to fluctuate between 2009 and 2013. This could mean that, if given due attention, melons may have the potential to be an export commodity for ASEAN.

CURRENT POLICIES AND STRATEGIES

Distribution System for Indonesian Fruits

In Central Java, the several regions that produce avocadoes, mangoes, mangosteens,

watermelons, melons, bananas and durians have three distinct marketing distribution patterns for these commodities. The first is farmer – consumer (1); the second is farmer – trader – outlet - end consumer (2); and the third is farmer – distributor – outlet – end consumer (3) (see Figure 1). The distribution channels are still in a traditional format and lack innovative marketing outlets to ensure that the end products are not priced highly due to the presence of middlemen in the distribution chain.
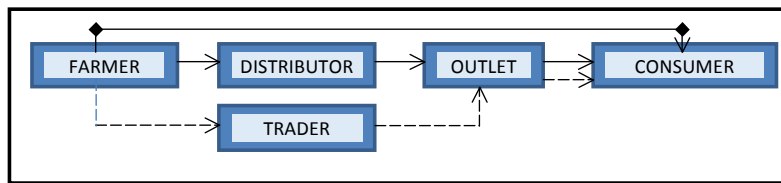

Figure 1. Distribution Systems for Indonesian Fruits

Other than the traditional distribution system, several factors which also inhibit the effective distribution of local fruits in Indonesia are: (1) Production, which depends heavily on natural climatic conditions, is unable to guarantee desired quantity and continuous availability of the fruits; (2) Producers have not been oriented towards ensuring good quality of their produce. Local producers are still lacking in concern for the quality of their products. In deliveries, high quality fruits are mixed with bad quality ones and even with leaves, twigs and rotten fruits. As a result, 40% to 60% of the deliveries are rejected and disposed of. The poor quality of these local commodities is as a result of lack of cultivation technologies, harvesting methods and post-harvest management; (3) The cultivation of most fruits in Indonesia still depends on inefficient and traditional production systems and agro forestry; (4) The lack of appropriate R & D (Research & Development) programmes by the government. Farmers conduct non-institutionalised and unintegrated development programmes on their own initiative, thus, producing relatively low added value fruits.

Government Policies and their Implications on the Trading System

In 2012, the Indonesian government launched a policy to limit the distribution channels for the import of horticultural commodities. Based on the Indonesian Farming Ministry Regulation Numbers 15 and 16, 2012 (effective 19 June, 2012), imports of horticultural commodities are only permitted via Soekarno Hatta Airport in Jakarta, Tanjung Perak Sea Harbour in Surabaya, Belawan Sea Harbour in Medan, and Makassar Sea Harbour in Sulawesi. The Tanjung Priok Sea Harbour was not

included. The objective of the policy was to enable the Indonesian government to have more effective supervision over imported commodities that pass through those ports. The Tanjung Priok Sea Harbour was not included among these ports due to several reasons: (1) Insufficient quarantine laboratories that might pose a serious threat to national food safety; (2) The quarantine officers in Tanjung Priok were overwhelmed with goods that needed clearance ; and (3) Negative cases that might threaten national food safety due to ineffectiveness of the quarantine officers (Nasution, 2013). Therefore, many WTO countries protested against the decision of the Indonesian government because they had to pay higher transportation costs to bring their commodities into Indonesia through Tanjung Perak Harbour instead of Tanjung Priok, which is nearer. Many small-scale importers even claimed bankruptcy due to this decision.

In 2013, the government introduced Indonesian Farming Ministry Regulation Number 60, (2012) that places a limitation on imports of horticultural commodities. Table 14 shows import quotas for fruits

Table 14
Regulations on Horticultural Commodities

Limited Quotas for Imports	Banned Foreign Fruits
Orange	Durian
Lemon	Pineapple
Grapefruit/Pamelo	Melon
Anggur	Banana
Apple	Mango
Longan	Papaya

Source: Suswono (2014)

beginning from early 2013 to the end of that year.

A policy to limit imports should certainly be accompanied by increased domestic production to meet local demand. In order to prevent high inflation, therefore, the government should first pay closer attention to domestic supplies before implementing the policy. However, it turned out that Regulation Number 60 (2012) by the Farming Ministry increased inflation rates. In several big cities in Indonesia, the price of a few horticultural products has increased. In February 2013, the price of tomatoes, grapes, apples, melons, papayas, pears and bananas increased quite significantly (Agriculture Department, Central Java, Indonesia, 2014).

In response to the import quota policy, the United States, as one of the many countries ratifying the trading regulations of the WTO, sued the Indonesian government. The US believed that the Indonesian government had violated an international regulation for trade. The controls on imports by the Indonesian government had a negative impact on the export of horticultural products from the US. Data from the National Board of Indonesia for Horticulture showed that the import of horticultural commodities from the USA was never more than 10% of total imports (Deloitte Consulting LLP, Fourth Quarter/Mid-Winter 2007-2008). Apart from the assistance by the government to boost domestic production for exports, other factors that may have inflated the prices of Indonesian fruits were natural seasons, rainfall, broken infrastructure and

sea harbours with their various problems. All these problems should be managed to prevent a further rise in inflation. One way to solve these problems is by guaranteeing sufficient supplies.

The poor climate for agricultural business and the very limited R & D are often the culprit, which in turn hinder the Indonesian government from granting bigger funds for the development of the horticultural industry. Indonesia has many experts, but they have not been working on R & D programs that can promote and advance Indonesian fruit farming or the plantation industry.

CONCLUSION AND RECOMMENDATION

Indonesia is set to improve its exports of horticultural products through its recognition of the competitive power of selected fruits and the support from the government. Data were used to calculate the index for comparative advantage, the potential for export or import, and whether the fruit industry is suitable for intra- or inter- industry trade. This study made the following discoveries:

1. Five Indonesian fruit species had positive indices for the Specialized Trade Index. These were avocadoes, mangoes, mangosteens, watermelons and melons. Bananas, durians and longans had negative indices for the STI, which meant that their imports exceeded exports.

2. There were three patterns in the distribution chain for Indonesian fruits: (1) farmer – distributor – outlet – end consumers, (2) farmer – trader – outlet – end consumer, and (3) farmers – end consumer

3. The controls imposed by the Indonesian government on imports, particularly for horticultural products, have had an adverse effect on the industry, particularly for farmers.

Several factors explain the stiff competition: (1) imported fruits are cheaper than domestic ones; (2) continuous and stable supplies of imported fruits; (3) the more attractive appearance of imported fruits; (4) the distribution networks for imported fruits are very well-managed, beginning from the distributors to the end users.

The so-called "six pillars for horticultural development", may help to address the issue of competition and which must be implemented simultaneously and in an integrative fashion among the central, provincial and regional governments of Indonesia. This means that the "six pillars" should be treated as inseparable from one another, and implemented in an integrated manner. The "six pillars" are: (1) Development of horticultural agro business centres; (2) Good arrangements for SCM (Supply Chain Management); (3) GAPs (Good Agricultural Practices) and SOPs (Standard Operating Procedures); (4) Integrated facilities for investments in horticultural businesses; (5) Development

of relevant business institutions; and (6) Increased consumption and acceleration in exports.

To make this "six pillars" work and successful, the government of Indonesia has to play a crucial role in planning, implementing and monitoring the progress of this developmental project. Business centres must be planned and set up by those who know the business and capable of pushing the business forward. Supply Chain Management should draw in experts to chart the supply chain and manage any problems that arise. The GAPs and SOPs should be diligently carried out to avoid mishandling or faults that might occur. Stringent and wise investments in facilities and strategies to increase domestic and international consumption of fruits such as techniques to improve fruit quality and expansion of export market should be in place.

Farm Empowerment Centres (Figure 2) for horticulture comprising research centres, supply centres and training centres, have been established in 14 districts/cities in Central Java. The types of commodities have been adapted to the potential of the region by implementing good agricultural practices and standard operating procedures while the supply chain management is constrained because farmers have, on average, only 0.2 ha of land, a weak institution, and poor access to markets. Therefore, the development of centres for premium quality fruits has gained importance in order to

ensure the quality, quantity and continuity of supply.

Also, it is recommended that the government implements policies that will help to integrate the businesses of farmers through the maximisation of lot productions, the revitalisation of *pro-job, pro-poor, pro-growth and pro-environment*, the revitalisation of facilities & infrastructure, the reformation of both domestic and foreign markets for Indonesian fruits, the harmonisation of regulations, and the synchronisation of both agri- and agro-businesses.

In conclusion, to enable the horticultural industry in Indonesia to flourish and grow, three actions are needed:

1. Fruit producers have to improve the production and quality of their products. This should be supported by R & D by experts in the field of horticulture.

2. The distribution (marketing) channels should be integrated and improved in order to enable an easy supply of products at a less cost and which is more time efficient.

3. The government of Indonesia has to play an active and effective role in formulating policies that will benefit domestic producers through a detailed studies of SOP (Standard Operation Producers).
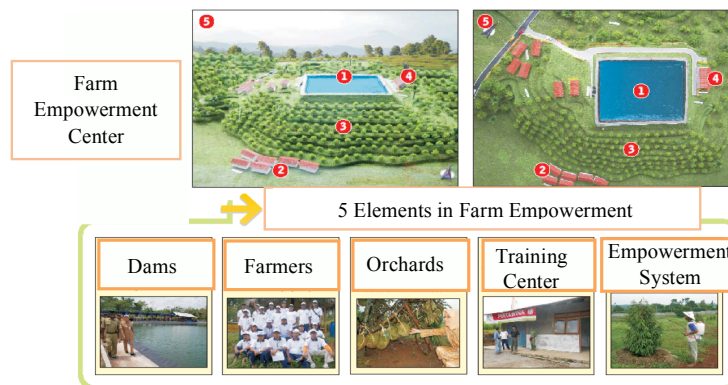
Figure 2. Integration of Farm Empowerment Model

ACKNOWLEDGEMENT

REFERENCES

ADCJ. (2014). *Agriculture Department Central Java, Indonesia*. Retrieved May 24, 2015, from http://dinpertantph.jatengprov.go.id/data/

Agarwal, S., Marriott, T., & Mussomeli, A. (2007, October). Effective commodity management: A source of competitive advantage. *Deloitte Consulting LLP*, 16-17.

Heinze, A. (2008). *Value links Manual: The Methodology of Value Chain Promotio*n. Frankfurt: GTZ Eschborn.

Nasution, I. (2013). *Buah Indonesia Belum Bisa Bersaing Dengan Buah Impor Cin*a. Retrieved November 29, 2015, from http://kbr.id/indranasuton/06-2013/buahindonesiabelumbisabersaingdenganbuahimporcina/22202.html

Soesilowati, E., Indriyanti, D. R., & Widiyanto, W. (2011). Model Corporate Social Responsibility Dalam Program Pemberdayaan Petani Hortikultura. *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi dan Pembangunan, 12*(1), 102-117.

Sulandjari, S. (2011). *Planning, Coordination and empowerment Model of Small Medium Enterprises Sinergitas Model/Sistem Penguatan Koperasi dan UKM*. Partnership of Cooperation Department and Small Medium Enterprises Central Java.

Suryamin. (2014). *Statistical Yearbook of Indonesia*. Jakarta: BPS-Statistics Indonesia.

Suswono. (2014). *Permentan-No-60-Thn-2012-ttg-RIPH*. Retrieved January 3, 2016, from http://hortikultura.pertanian.go.id/wpcontent/uploads/2015/06/Permentan-No-60-Thn-2012-ttg-RIPH.pdf

Tambunan, T. H (2004). *Globalisasi dan Perdagangan Internasional*. Bogor: Ghalia Indonesia.