



Universiti Putra Malaysia

REVITALISING THE MALAYSIA TROPICAL INDUSTRY: ENHANCING LINKAGES AMONG SMALL-SCALE PRODUCERS AND OTHER STAKE HOLDERS IN THE VALUE CHAIN

Constraints and Challenges in the Malaysian Fruit Industry – Taking Responsibility for What Happens in Our Own Supply Chain

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Introduction

Fruits and vegetables:

- economic value
- improving diets.

WHO estimates : low fruit and vegetable intake contributes:

16 million disability-adjusted life years

1.7 million deaths worldwide

WHO and FAO: minimum of 400 grams of fruit and vegetable per day for the prevention of chronic diseases like heart disease, cancer, diabetes and obesity, and for the prevention and alleviation of several micronutrient deficiencies – especially in less developed countries.



The global fruit production:

- Soaring at annual rate of about 3% over last decade
- Driven by expansion of area in Asia particularly **China**
 - emerged as the world's largest fruit producer with global output shares of about 20%.
- Strong growth recorded in food-insecure and low income regions such as Sub-Saharan Africa and Southeastern Asia.

(FAO Statistics Year Book 2013)



- Fruit production in Malaysia - a slight drop of about 1.2%, from 1,607,611 tones 2005 to 1,589,118 in 2014.
- Domestic production supplies 56% of the total demand for fruits
- Fruit consumption in Malaysia for the last decade increased by almost 30%
- Fruit import value has escalated by 75% for the same period.



Objective:

- To discuss the macro perspective of the performance of Malaysian fruit industry, policies related to it, issues and challenges faced by the fruits industry.
 - Ponder and deliberate by workshop as to develop plan of actions to revitalize the Malaysian fruit industry.



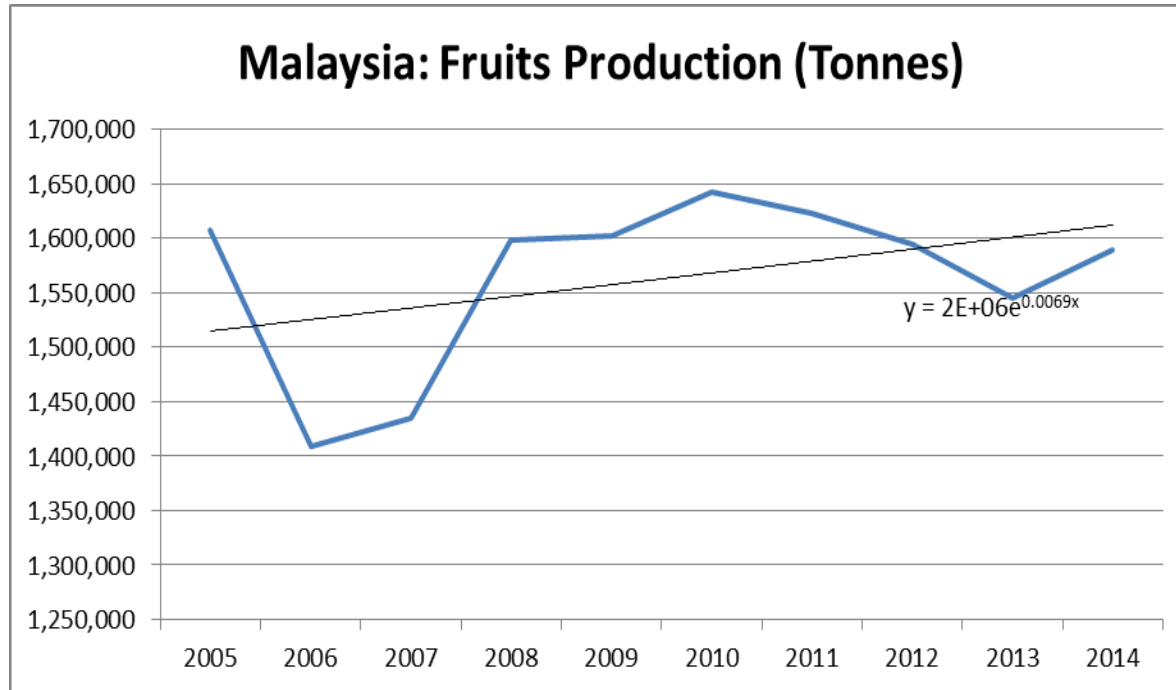
Performance of Malaysian Fruit Industry

Scope

- ❑ The time period - 2005-2014
- ❑ Some indicators of the sector in the period of NAP3, NAP4 (National Agro-food Policy), and NKEA
- ❑ Context of production, planted area, productivity, self-sufficiency level, consumption, processing, marketing and trade



Production



Highest recorded in 2010 :
1,641,872 tons

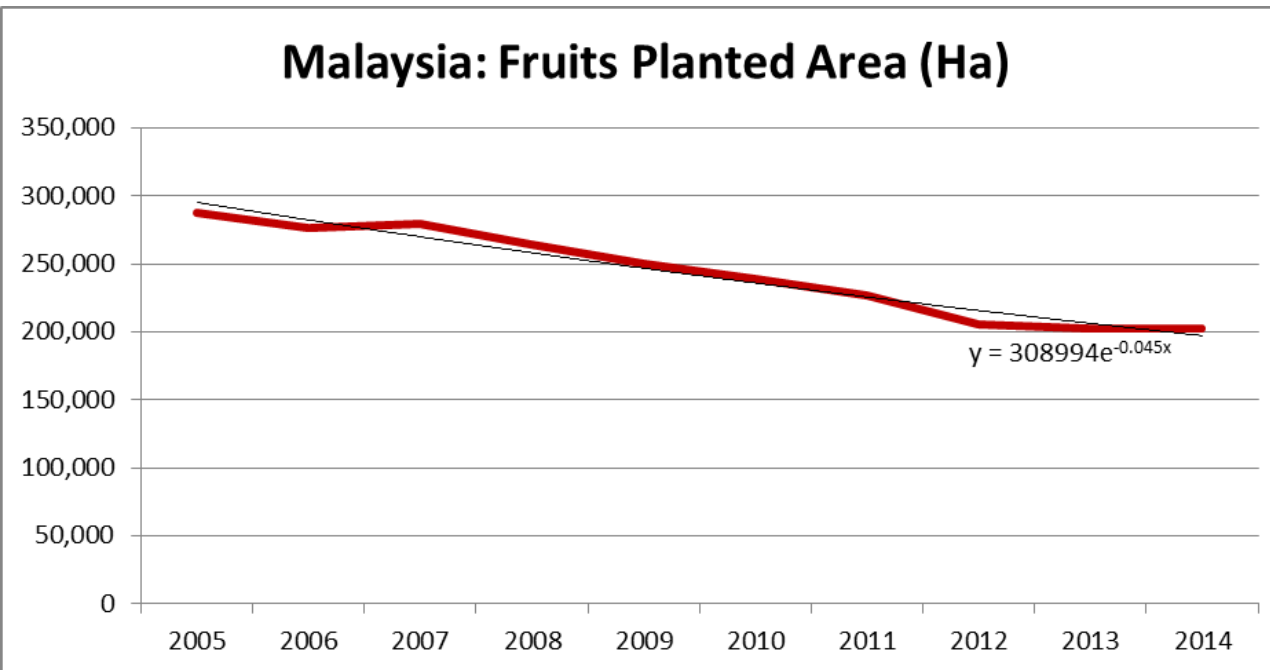
Lowest in 2006, 1,408,850
tons .

Production trend shows
average production in the
period grew at 0.6% per
annum.



Planted Area

Malaysia: Fruits Planted Area (Ha)

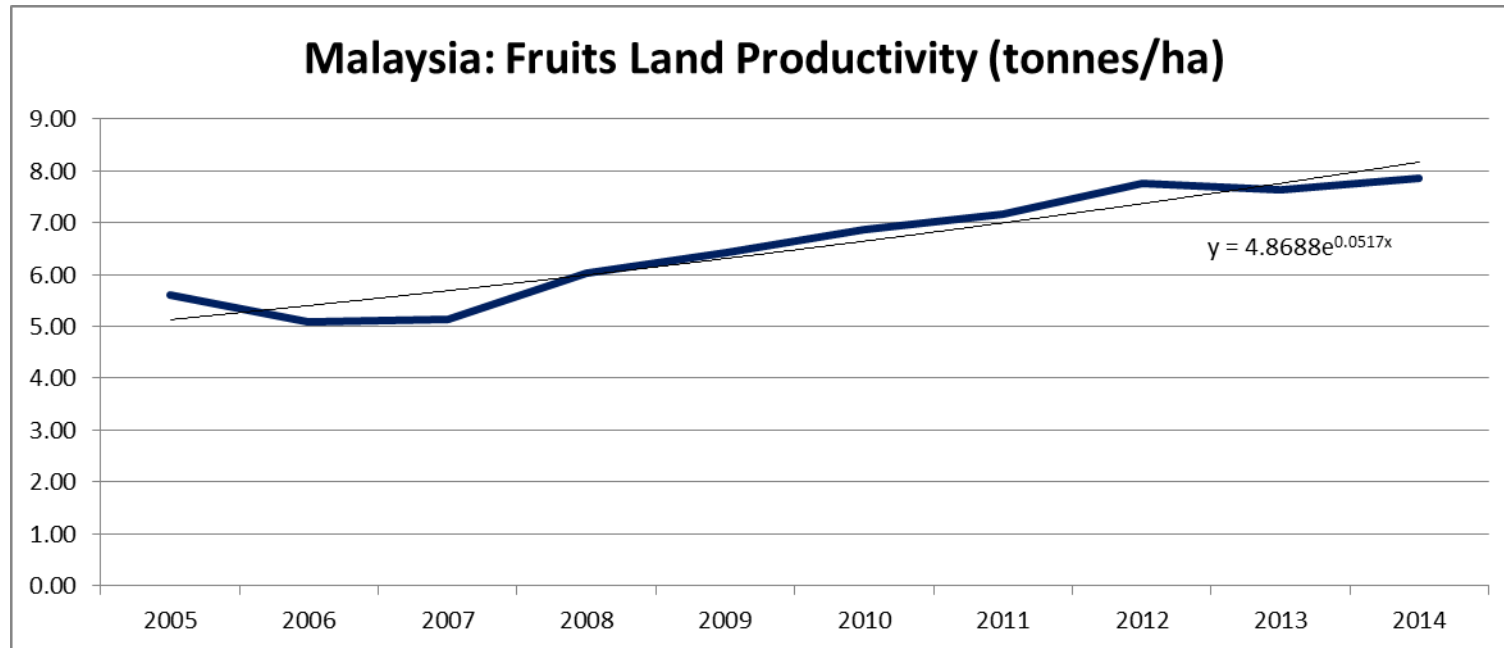


Fruit planted area dropped from 287,455 hectares in 2005 to 202,481 hectares in 2014 – 29.5% decline. The trend indicates 4.5% average annual decrease fruit planted area since last decade.

Data source: MoA, Agriculture Statistics and Agro-food Statistics (2008-2014)

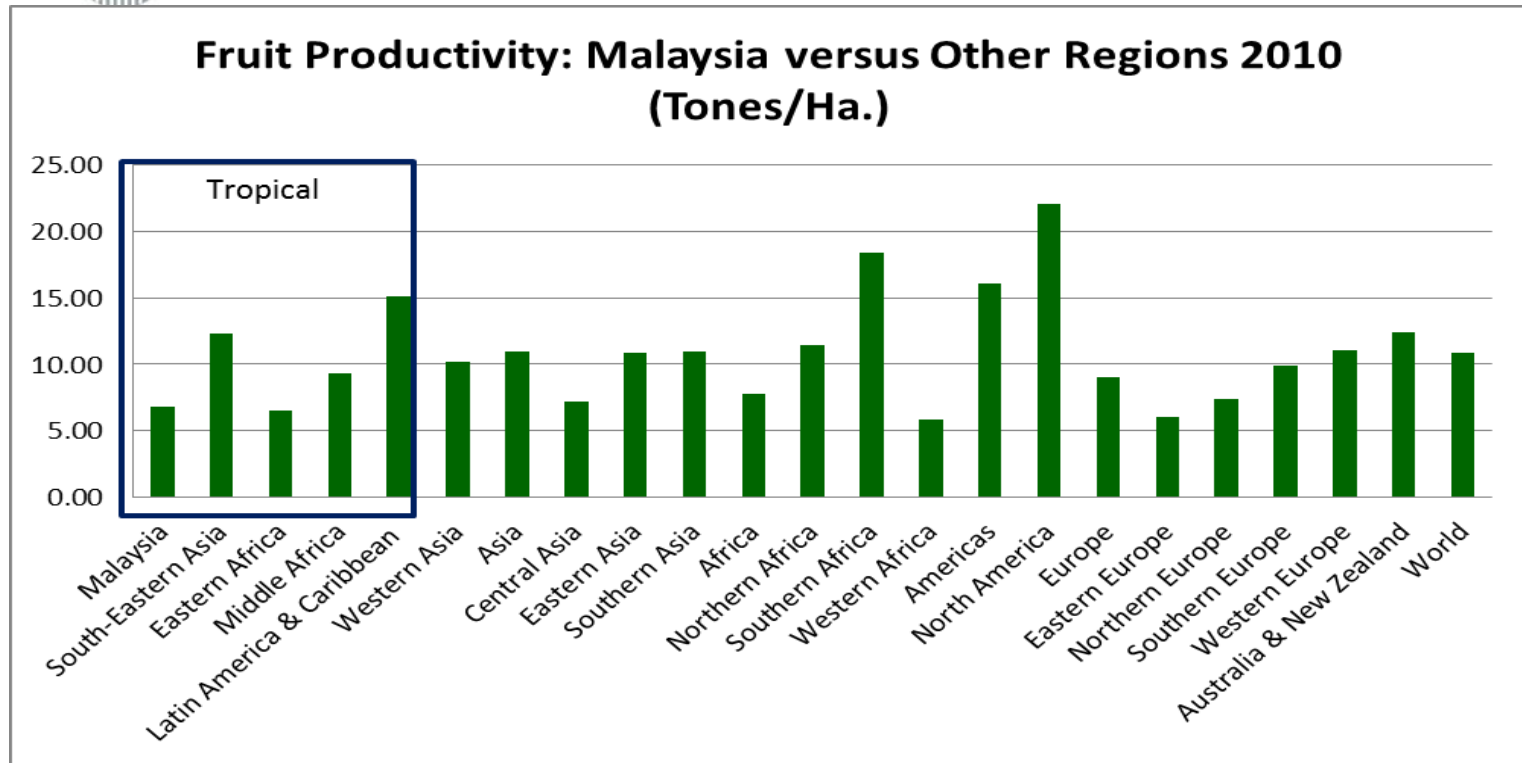


Productivity



**Fruits productivity in past 10 years has recorded an increase of 40%,
- from 5.59 tons/ha. in 2005 to 7.85 tons/ha. in 2014'
- average annual growth of 5.2% .**

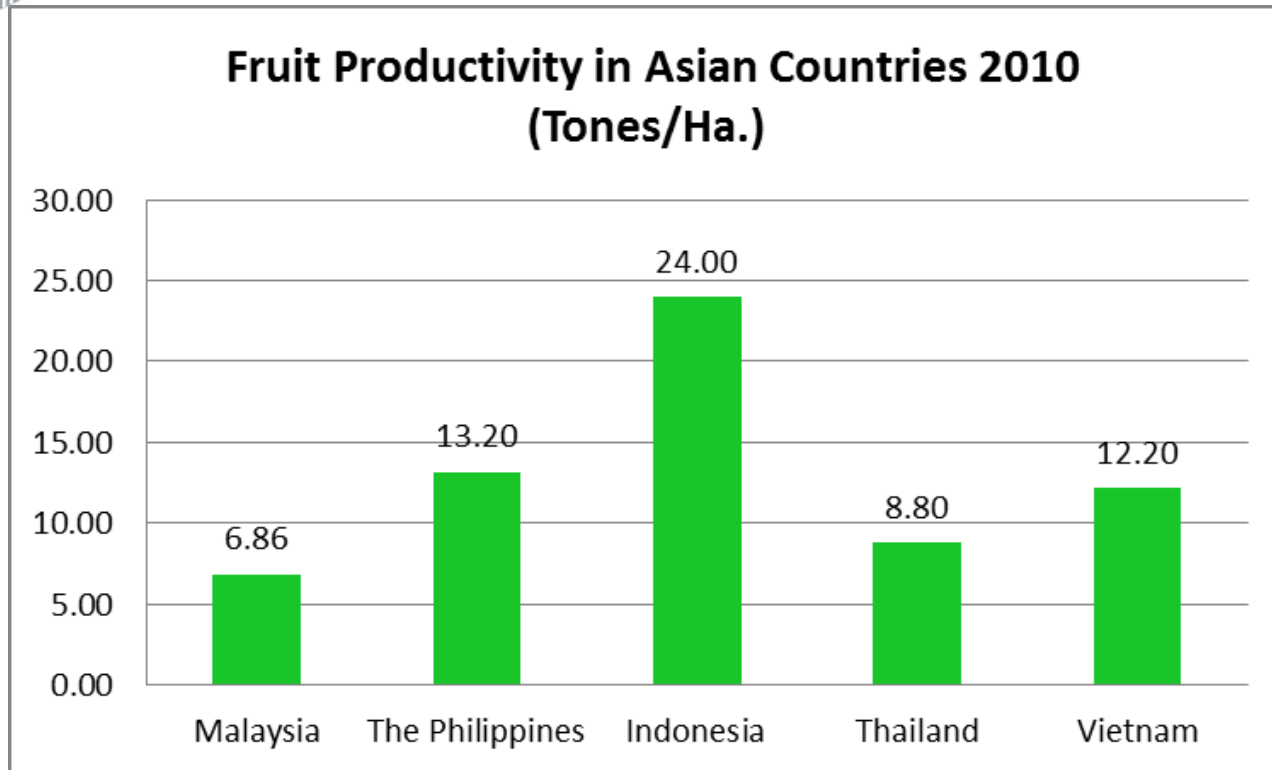
Impressive growth could due to effective use of inputs and improved farm management practices and technology.



Data source: FAO Statistical Yearbook 2013.and Agriculture Statistics and Agro-food Statistics (2008-2014)

Tropical regions - Malaysia's fruit productivity is slightly higher (5.25%) than Eastern Africa (the least productive region in the tropics).

Malaysia's productivity - 79% lower than Southeast Asia average; 36% lower than Middle Africa average; and 120% lower than Latin America and Caribbean average; and approximately **59%** lower than the **world's fruit productivity**.



Data source: FAO Statistical Yearbook 2013.and Agriculture Statistics and Agro-food Statistics (2008-2014)

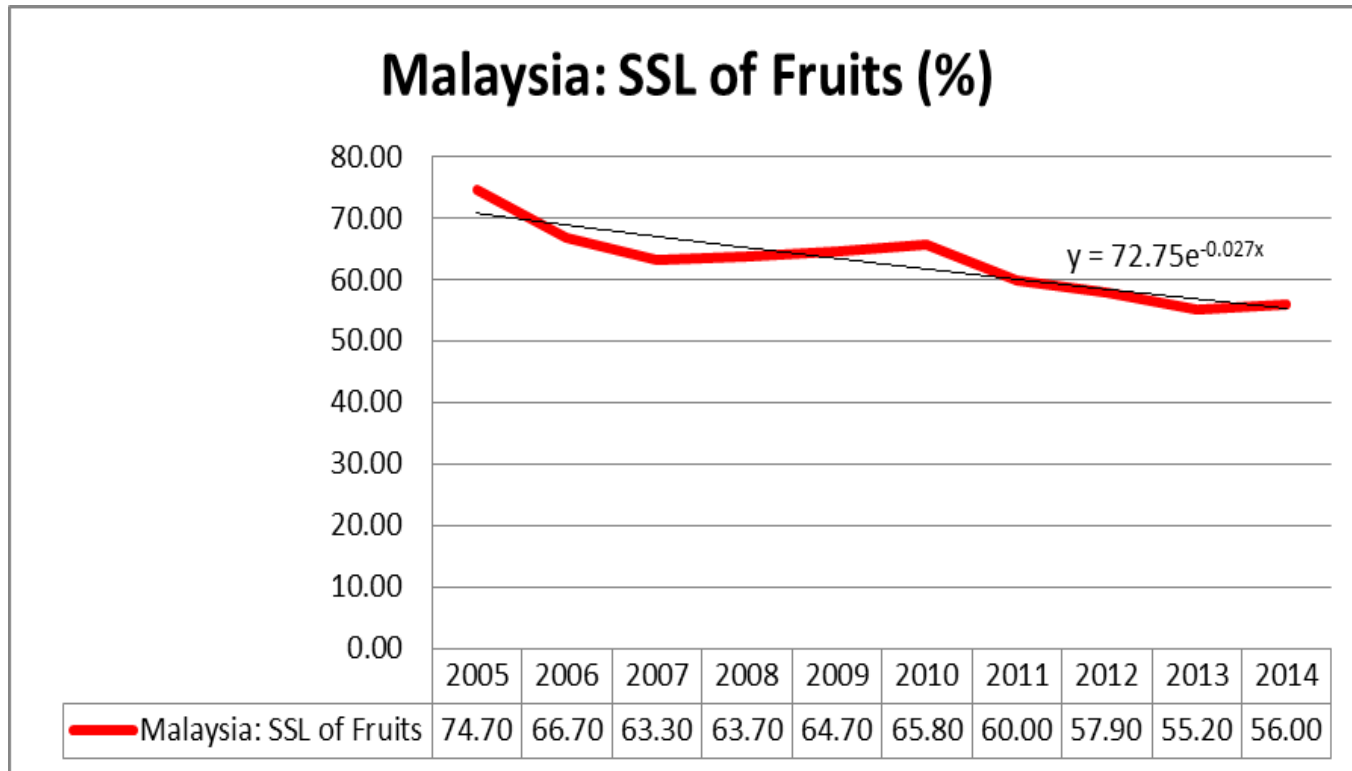
Fruit productivity in the Philippines, Indonesia, Thailand and Vietnam are **92%, 250%, 28% and 78% higher than in Malaysia.**

The significantly low relative productivity needs to be addressed if Malaysia is to embark on expanding fruit production and compete in both domestic and international markets.



Fruit Self-sufficiency Level

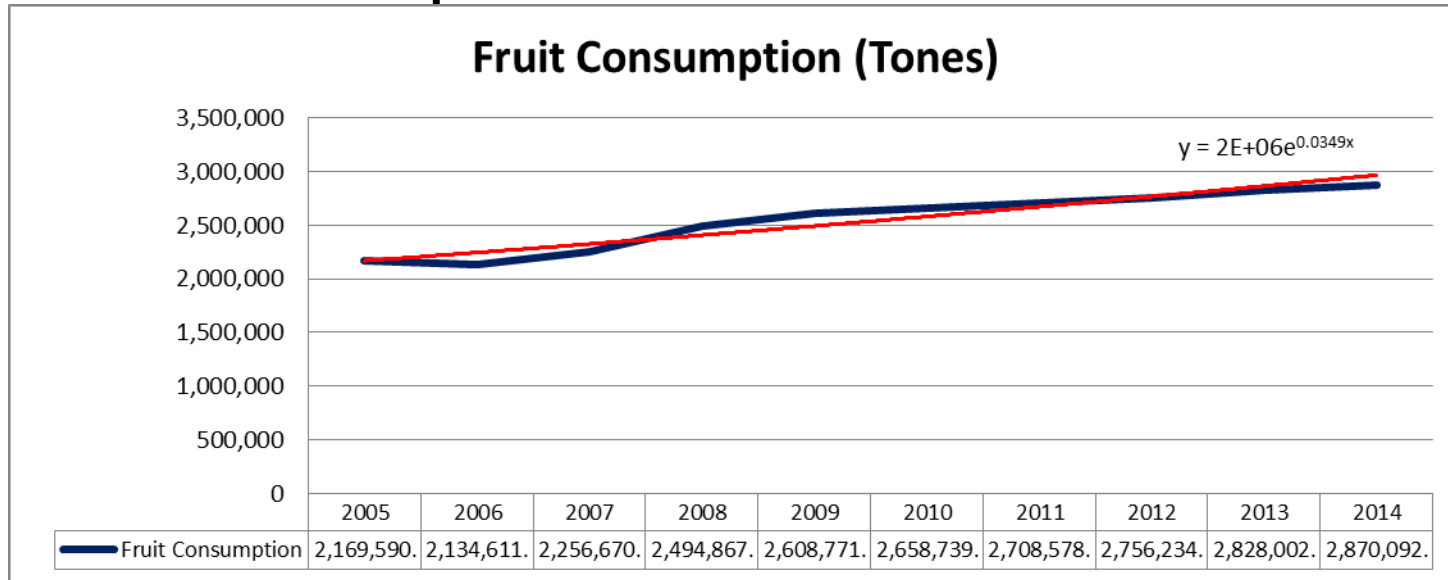
2005-fruits produced domestically supplied 74.7% of domestic fruit consumption.
2014- the capacity of domestic supply to fulfill the domestic demand decreased to 56%. Trend of fruit SSL from 2005 to 2014 -declining trend at the rate of 2.7% /year



Data source: MoA, Agriculture Statistics, Agro-food Statistics (2008-2014)



Fruit Consumption

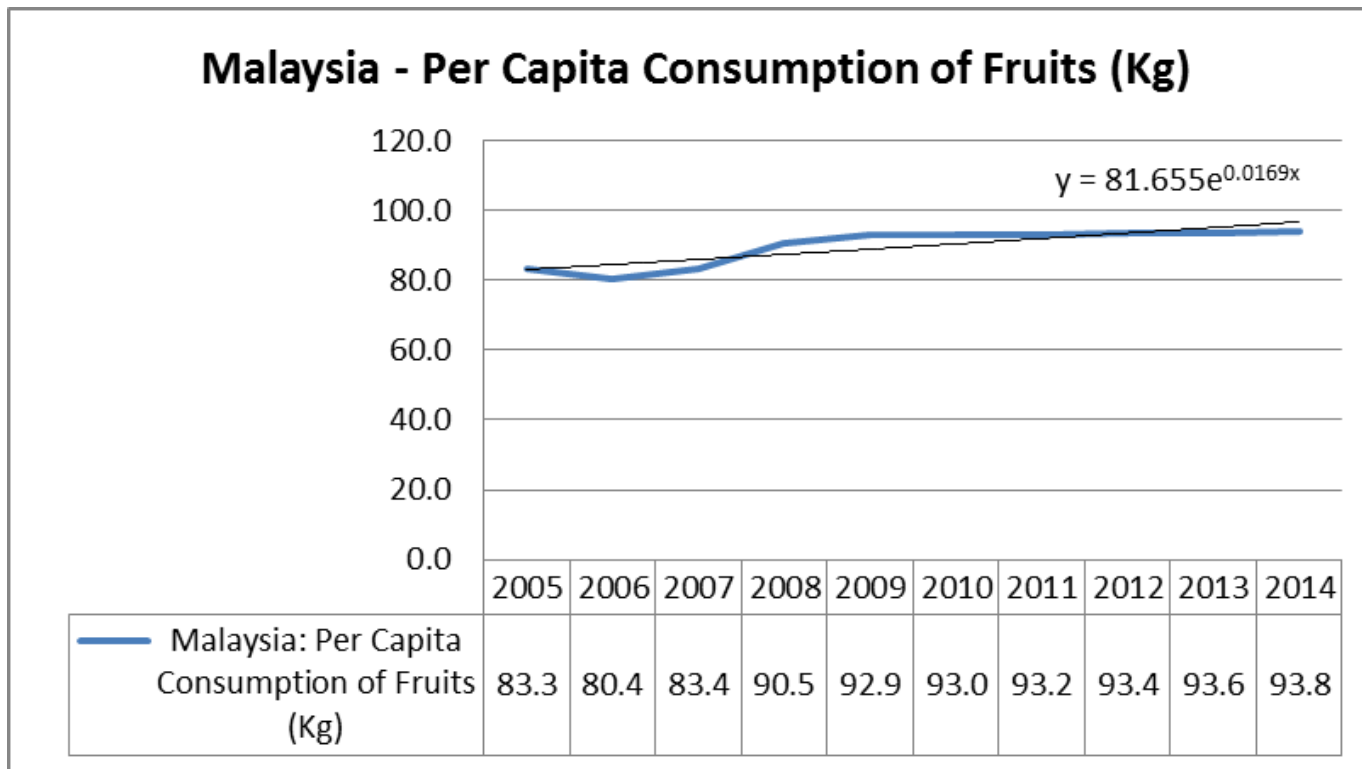


*Computed based on per capita and population

2005 - 2,169,500 tones; increased by almost 32% (2,870,092 tones in 2014)
The growth rate is estimated at 3.5% per annum. With this growth rate the estimated demand in 2020 is forecasted to be 3.6 million tones (3.3 million by ETP)
Demand for fruits increase is expected from population increase (2.4% in 2013), change in taste and preferences, and change in life style.



Fruit Consumption Per Capita

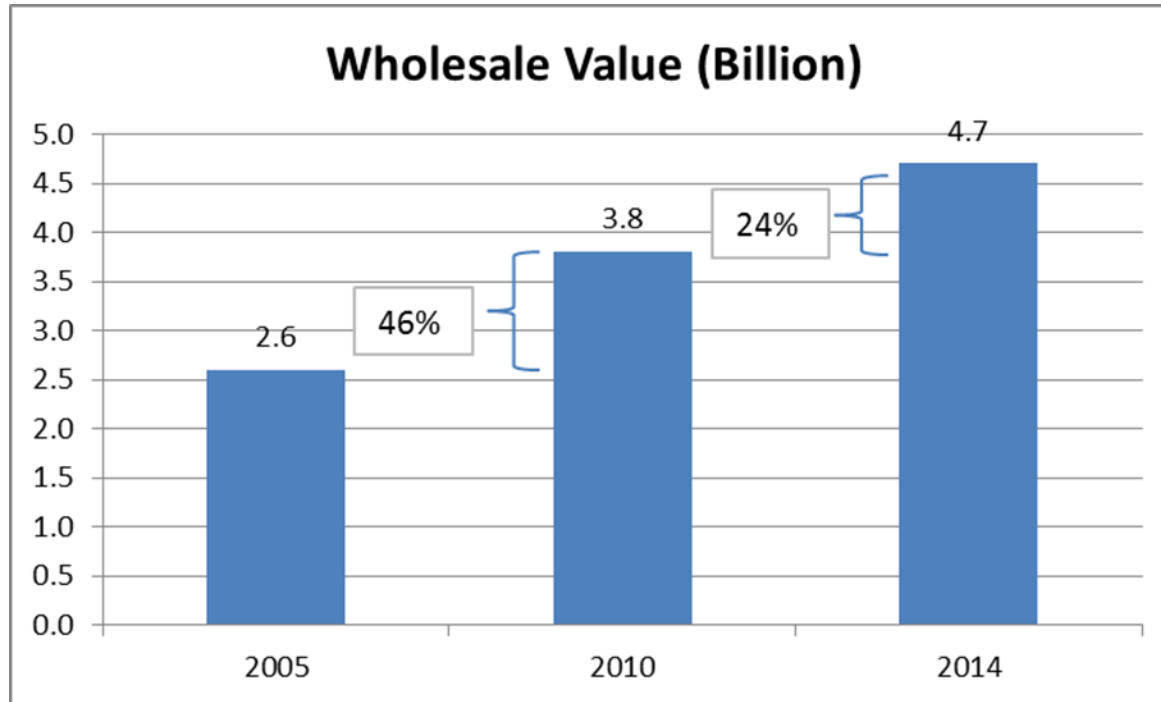


Data source: FAO Statistical Yearbook 2013. and Agriculture Statistics and Agro-food Statistics (2008-2014)

Consumption per capita grew at the rate of 1.7% per year indicating an increase in per person fruit intake per year. There was a 12% increase in per capita consumption of fruit from 2005 to 2014.



Fruit Marketing

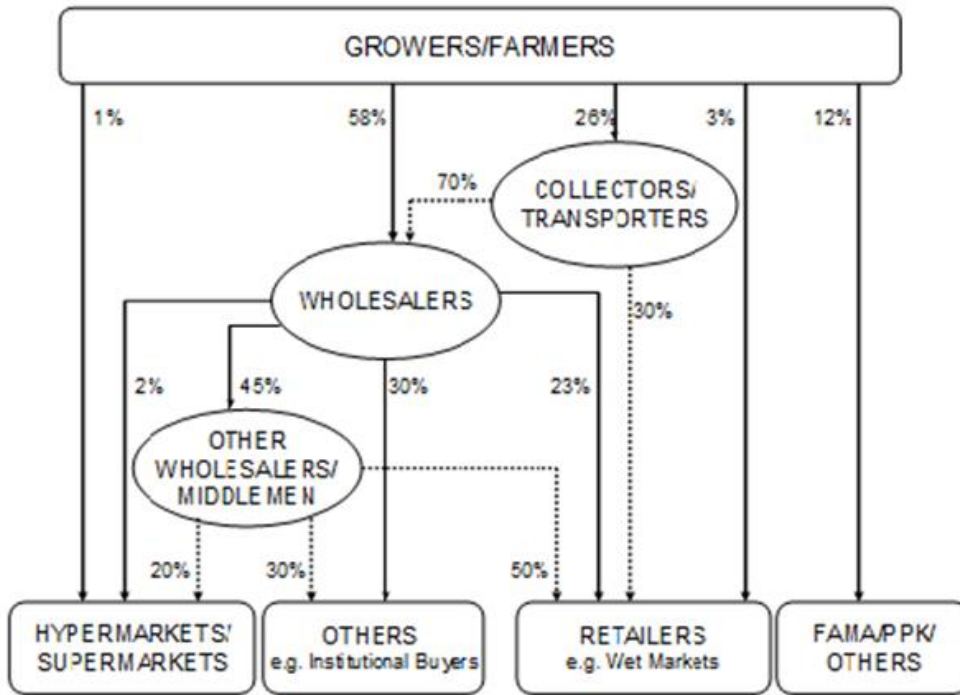


Data source: FAO Statistical Yearbook 2013.and Agriculture Statistics and Agro-food Statistics (2008-2014)

The table shows an increase in value by almost 77% from 2005 to 2014, i.e from RM2.6 billion to RM4.7 billion

Fruit Marketing

Figure 17: Fresh Fruits Supply Chain



source: Norsida et.al 2007

The marketing chain - concentrated at wholesale. FAMA's study in 2007 indicated that 58% of fruits produced are marketed through wholesalers and 26% through collectors/transporters. Out of total fresh fruit marketed through collectors, 70% goes to wholesalers.

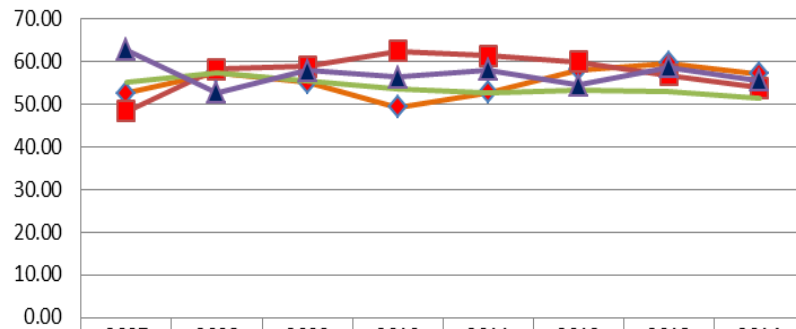
Indicates the marketing power is more concentrated at wholesale level where lower competition as compared to farm production and retail levels.

Long marketing chain indicate less efficient marketing - marketing costs increase as a fruit goes through different stages of market intermediaries and causing high retail price and subsequently affect quantity demanded



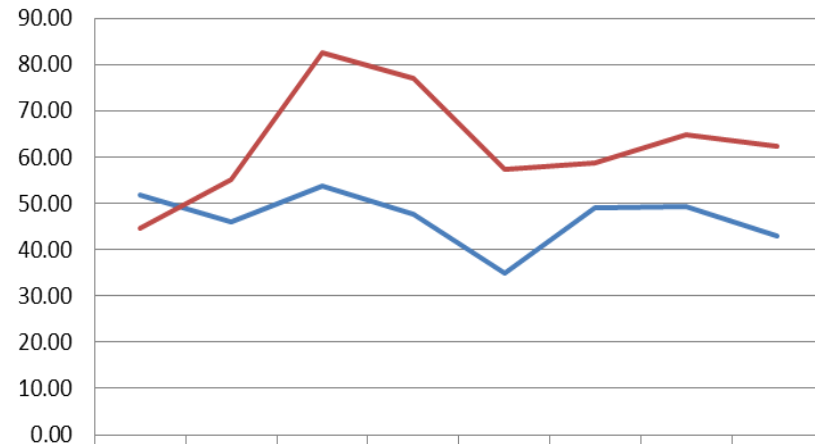
Gross Marketing Margin Trends

Gross Marketing Margin of Selected Non-Seasonal fruits (%)



	2007	2008	2009	2010	2011	2012	2013	2014
Starfruit	52.70	57.58	55.22	49.30	52.78	58.11	59.76	57.14
papaya	48.48	58.33	58.97	62.50	61.36	60.00	56.86	53.85
Banana	55.35	57.45	55.56	53.57	52.63	53.23	53.03	51.35
Watermelon	62.82	52.78	57.89	56.41	58.14	54.55	58.80	55.56

Gross Marketing Margin D24 & Rambutan(%)



	2007	2008	2009	2010	2011	2012	2013	2014
D24	51.75	46.01	53.89	47.83	35.03	49.01	49.32	42.86
Rambutan	44.54	55.22	82.67	77.14	57.33	58.90	64.94	62.50

**In general : Gross marketing margins have not changed much.
NAP 3 – reduce fruit marketing margins.**



Agro-based-Fruit products/Juice/Cordial

Fruit Products/Juice/Cordial			
Year	Sales value (RM Million)	Operators	Average Sales
2006	4.80	94	51,063.83
2007	4.60	96	47,916.67
2008	9.10	114	79,824.56
2009	9.50	127	74,803.15
2010	6.00	108	55,555.56
2011	31.70	285	111,228.07
2012	24.20	313	77,316.29
2013	33.85	304	111,348.68
2014	35.00	300	116,666.67

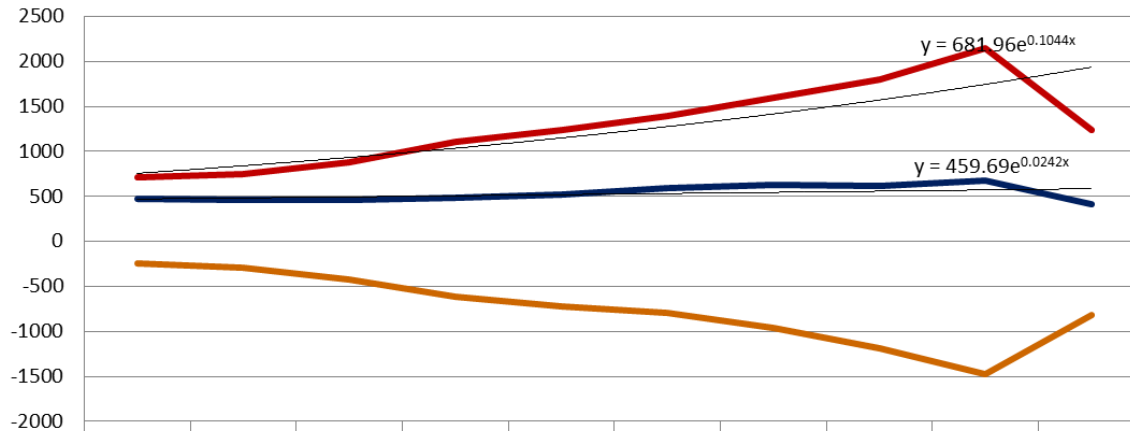
**Increase
number of
operators
average annual
growth - 20%
Sale value
average annual
growth – 28.5%**

Data source: FAO Statistical Yearbook 2013.and Agriculture Statistics and Agro-food Statistics (2008-2014)



Fruit Trade

Malaysia Fruits Trade (RM Million)



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
— exports	468	459	460	487	518	590	626	616	676	416
— imports	707	746	884	1105	1240	1389	1592	1804	2150	1238
— BOT	-239	-287	-424	-618	-722	-799	-966	-1188	-1474	-822

Data source: FAO Statistical Yearbook 2013. and Agriculture Statistics and Agro-food Statistics (2008-2014)

Fruit import trend - increasing imports with annual growth rate of 10.4%, whereas fruit exports - slower growth at 2.4% per annum. Higher import growth against much slower export growth result in increasing fruit trade deficit. The fruit trade deficit growth rate in the period is 17.6% per year.



Performance Summary

Parameter		Performance
Production		Grew 0.6%/yr
Area Planted		Declined 4.5%/yr
Productivity		Grew 5.2%/yr. (value-relatively low)
Agro-based (Fruit Products/Juice/Cordial)	Participants	20% average annual growth
	Average sales value	28.5 –average annual growth
Market Structure	Long chain	Concentrated at wholesale
Marketing Margin		Do change
Pricing		Not transparent
Trade	Imports	10% average annual growth
	Export	2.4% average annual growth
	BOT	17.7% average annual deficit



Fruit Sector Development Guiding Principles

1. NAP 3 (1998-2010)

- Policy objectives
 - to ensure adequate and reliable supply of high quality and safe fruits to meet the domestic demand for fresh fruits as well as for the processing industries,
 - to develop the fruit industry based on the strategic advantage of selected fruits to capitalize on the niche international markets for fresh tropical fruits.
- **Fifteen tropical fruits** have been identified in NAP3, namely banana, citrus, durian, mangosteen, papaya, pineapple, starfruits, melons, guava, ciku, jackfruits, cempedak, duku langsung/dokong and rambutan.
- Institutional support, infrastructure and incentive – encourage private venture large scale commercial production.
- Special focus to **mangosteen** - as a flagship of the Malaysian fruit industry



2. ETP & NKEA

- In 2010, Economic Transformation Program (ETP) (2010-2020). Objective is to transform agriculture into agribusiness
 - moving towards a model which is inclusive but simultaneously anchored on market-centricity, economies of scale and value chain integration.
- The focus of fruit production is to tap the **premium** export markets.
- To realize the goal, EPP 7: Upgrading capabilities to produce fruits and vegetables for premium markets is identified.
- The expected outcome from EPP7 would be the sectors will contribute RM1571.5 million to the GNI by 2020.



3. National Agro-food Policy (2011-2020)

- Policy target - to increase fruits production in order to meet local demand and strengthening both local and international fruit markets.
- Strategies:
 - i. Increase the production of fruit through commercial farming especially for export markets,
 - ii. improve pest and disease control in fruit production,
 - iii. exploitation of rare/exotic fruits (*buah-buahan nadir*)
 - iv. consolidate the marketing network of fruits.



Issues in the Malaysian Fruit Industry

Low Productivity

- Even though recorded positive 5% annual growth since last decade, but relatively low as compared to potential yield and productivity of the region.
- Productivity - influenced by effective use of inputs, technology, farm management, post-harvest losses rate, and pest and disease management and control.
- Besides improving productivity – also improve fruit quality; which would influence price and market.
- These factors have been identified and stated in both NAP3 and National Agro-food Policy, this issue has yet to be addressed.
- This productivity gap could be narrowed through technology adoption, GAP, knowledge, extension and sound incentives.



Small Scale Production

- Dominated by small holders - causes high per unit cost - low returns or unprofitable to producers.
 - to reduce costs, producers might reduce the use of inputs such fertilizer or pest and weed control which result in lower yield and productivity and affecting fruit quality, which subsequently fetching lower price and income.
- To transform fruit industry & overcome the issue of limited land, and to encourage private sector's investment, the government establishes the Permanent Food Production Parks throughout the country.



Small Scale Production (cont.)

- Several large scale fruit farms were established by the government and government linked companies (GLC),:
 - Selangor Fruit Valley, MAFC, Citrus Valley, and Permanent Fruit Production Parks which are expected to make significant impact on fruit supply and trade but could not sustain due to various problems and constraints.
- The empowerment of agriculture cooperatives or Farmers Organizations with the capability to operate in larger scale and vertically integrated, backward and forward linkages, hence efficient supply chain management.
 - But of course the current agriculture cooperative and Farmers Organization need to be transformed.



Pest and Disease Management and Control

- Pest and disease pose major threat to the Malaysian fruit industry.
- Panama and Moko diseases - serious threat to banana crops. The former has been in the country for a long time while Moko is discovered in 2007 after a flood in the state of Johor.
- Greening was found to be the disease that wiped out citrus valley in Terengganu and Sarawak.
- Papaya dieback which first identified in 2003, - a major threat to papaya.
- Pests such as stem borer, fruit borer and fruit flies are pests that infesting fruit crops.
 - affecting **production and market access** to a certain countries



R & D not focusing toward industry's needs

- There seems to gaps between R & D carried out by research institutions and universities and the requirement of the industry.
 - Research in university – fulfilling researchers' and organizations' KPI
 - Long term vs short term research (short term preferred-faster findings and grant issues)
- R & D in priority areas such as pest and disease, seed quality which could solve some of production problems are still lacking.
- Technology transfer and adoption take long time to reach the target group (farmers) and ineffective due to lack of knowledge pertaining to the new technology among extension agents.



Long Marketing Chain

- Many levels of intermediaries - increases marketing cost, post-harvest losses and market information asymmetry and inefficient marketing systems.
- increases retail price - affecting quantity demand and lower producers' share of retail price - affecting supply.
- Current market structure - characterized by market power concentration increases at wholesale level - wholesalers use market power to manipulate prices -existence of asymmetrical flow of price changes.
- FAMA promotes direct marketing through *pasar tani*, about 12% of the total production is directly marketed to consumers
- To improve the supply chain management, FAMA and DoA jointly developed a parallel marketing where fruits produced at TKPM are marketed through TEMAN – yet to yield expected outcome.



Non-market based Price Determination

- In a perfectly competition market, price is determined by the interaction between demand and supply - reflecting the market condition.
- In imperfect competition market and distortion of market, prices are determined by those who control the market.
- The efficient price determination process is in open market where buyers and sellers meet and in a transparent flow of information between the participants.
- Agricultural economists argue that futures market and auction would ascertain price determined reflects the market.



Challenges

- The current policy statement pertaining to fruit industry is to expand production to cater both domestic and foreign demand.
- The basic pre-requisite to venture into fruit production or to participate along the supply chain is returns on investment where good returns spur investment.



Achieving and sustaining competitiveness for the Malaysian fruit industry

Competitiveness is defined as the **ability** a **firm** or **nation** to **offer products and services** that meet the **quality standards of the local** and **world markets** at **prices** that are competitive and provide **adequate returns** on the resources employed or consumed in producing them (businessdictionary.com).

Some of the key words discussed in issues above.



Some challenges related to achieving competitiveness

- Achieving production efficiency and high productivity
- Developing a sustainable fruit supply chain strategy
- Developing fruit processing industry
- Development of fruit entrepreneurs (Fruitpreneur)
- Market-centric production
- Coordinating R&D towards industry's needs
- Pest & disease management and control
- Determine sound policies



Conclusions

- Policy direction – expand fruit production to meet the market demand.
- This paper presents a brief macro-performance of the Malaysian fruit industry, policies pertaining to the industry. Issues faced by industry and challenges in revitalize the industry are also put forward.
- The aim is to provide a brief framework for further deliberation by the workshop in preparing plan of actions to develop a sustainable competitive fruit industry.



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Thank you



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