



HORTIN II Co Innovation Programme

Towards cost effective, high quality value chains

Export Market Study for Sweet Pepper and Shallots from Indonesia

HORTIN-II Research Report nr. 22

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The purpose of the HORTIN-II programme is to contribute to the development of cost effective high quality value chains for vegetables and fruits. Among others this can be achieved when technology development takes place in close collaboration between public institutions, farmers and private companies.

On the Indonesian side the programme is carried out by the Indonesian Centre for Horticultural Research and Development (**ICHORD**), Jakarta, with the Indonesian Vegetable Research Institute (**IVEGRI**), Lembang, and the Indonesian Centre for Agricultural Postharvest Research and Development (**ICAPRD**) in Bogor.

In the Netherlands the Agricultural Economics Research Institute (**AEI**), Den Haag, the Agrotechnology and Food Sciences Group (**ASFG**), Wageningen, Applied Plant Research (**APR**), Lelystad, and WUR-Greenhouse Horticulture (**WUR-GH**), Bleiswijk, all partners in Wageningen University and Research centre, are involved in the programme.

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Executive summary

Indonesia has a rich array of natural resources for producing a large variety of fresh vegetables. The country holds great potential for supplying the domestic market with high quality produce, as well as export markets. This report looks specifically into the export marketing of sweet pepper and shallots from Indonesia. These were two vegetable commodities which were subject to the HORTIN II co-innovation program, which took place in Indonesia from 2007-2010.

Firstly, findings from the current study indicate that Indonesia is not reaping the benefits of an increasing demand for fresh vegetables on the regional and global markets. This can mostly be attributed to the low level of development of post-harvest infrastructure and logistics in the country.

Secondly, looking at the specific markets for sweet peppers and shallots, opportunity exists for Indonesia in the regional ASEAN country markets, notably Malaysia and Singapore. Malaysia has quite a substantial population and positive demographic developments. It is relatively import-dependent for sweet peppers and shallots. Singapore has a smaller population, but with a high per capita income. Given that Singapore has little to know agricultural land, it is highly import dependent. Given Indonesia's proximity to these two markets, it has a natural competitive advantage in export.

Contrary to the available potential, Indonesia is not taking advantage of the positive developments for sweet pepper and shallots on the markets of Malaysia and Singapore. Statistics indicate that exports to these countries are in decline.

Despite this observation, the future looks positive. Domestic demand in Indonesia is picking up. It might temporarily result in more imports, but the production side is catching on. Over the mid-term, production is likely to meet domestic demand in volume and in quality. At the same this will build on strengthening the position of Indonesia on the export market.

1. Introduction

The current report provides insights into the export potential for two of the commodities which were worked with in the HORTIN II project, which took place from 2007 to 2010. These commodities were sweet peppers and shallots. The near to mid-term future will hold considerable prospects for Indonesian horticulture, both on the domestic market and the export market. In that light, the information gathered in this report can be used to further develop the competitive position of the supply chains for high quality horticultural produce.

Firstly this report reviews the existing production potential of horticulture in Indonesia. This will be used to reflect on the relative position as well as the competitive position of sweet pepper and shallot production. Secondly, an overview is provided of the major producing and importing countries in the world. From this overview, some conclusions will be drawn on focal countries that hold the most promising markets for taking up produce from Indonesia, namely Malaysia and Singapore. Lastly this report will look deeper into two of the major candidates

This work was conducted on the basis of statistics from major trade databases available on sweet pepper and shallot trade. Unfortunately, the available databases weren't able to provide specific data on these products. They mostly provided data of the collection of the capsicum variety (of which sweet pepper is one variety) and of the collection of shallots and onions. Where possible, specific data are provided.

Statistics were complimented with information which could be found in secondary data sources, like scientific publications, and trade literature. Also interviews were conducted with the private sector in Indonesia to get a better take on developments in the export sectors for the specific sweet pepper and shallot products. The questionnaire used for these semi-structured interviews is provided in Annex 1.

2. Horticultural Production in Indonesia

Agriculture in Indonesia faces a decline in its contribution to its gross domestic product. This is a phenomenon in the wider context of Asian countries that are profiting from economic growth and industrialization. In Indonesia's economy, the share of agriculture declined from around 49 per cent in 1970 to just over 13 per cent in 2005. Over the same period, the percentage of the workforce engaged in agriculture fell from around 66 per cent to 44 per cent. Agriculture thus has to increasingly compete with the countries demand for resources from other economic sectors.

Economic growth entails a strong income and population growth. This has resulted in a significant increase in food demand. Consequently, there has been a gradual increase in imports of other staples, such as wheat, to meet increasing domestic food demand. Growth in per person income has also led to an increase in demand for other food products, especially vegetables, fruit, sugar, beef, dairy products, poultry and seafood. While Indonesia is largely self sufficient in fruit, poultry and seafood, imports have increasingly become an important source of vegetables, sugar, beef and dairy products. (Bond, et al., 2007)

Fresh fruit and vegetables production in Indonesia is still concentrated in the islands of Java and Sumatra, respectively contributing 63 percent and 23 percent of the national production. Around 75 percent of farms in Indonesia are still less than one hectare in size (Suryhadi et al. 2006). Generally, vegetables production in Indonesia in the past ten years has been increasing quite modestly (World Bank, 2007). The greatest production growth in terms of total volume is seen amongst vegetables like potatoes, head cabbages, chilli peppers, and shallots. Vegetable production in Indonesia increased from 1994 to 2004, almost doubling in value terms from USD 2.49 billion to 4.995 billion. However the value of production has not risen accordingly. The top three vegetable commodities have been chilies, shallot, and eggplant. The trends of the leading vegetable crops, produced in Indonesia, is depicted in figure 1 below.

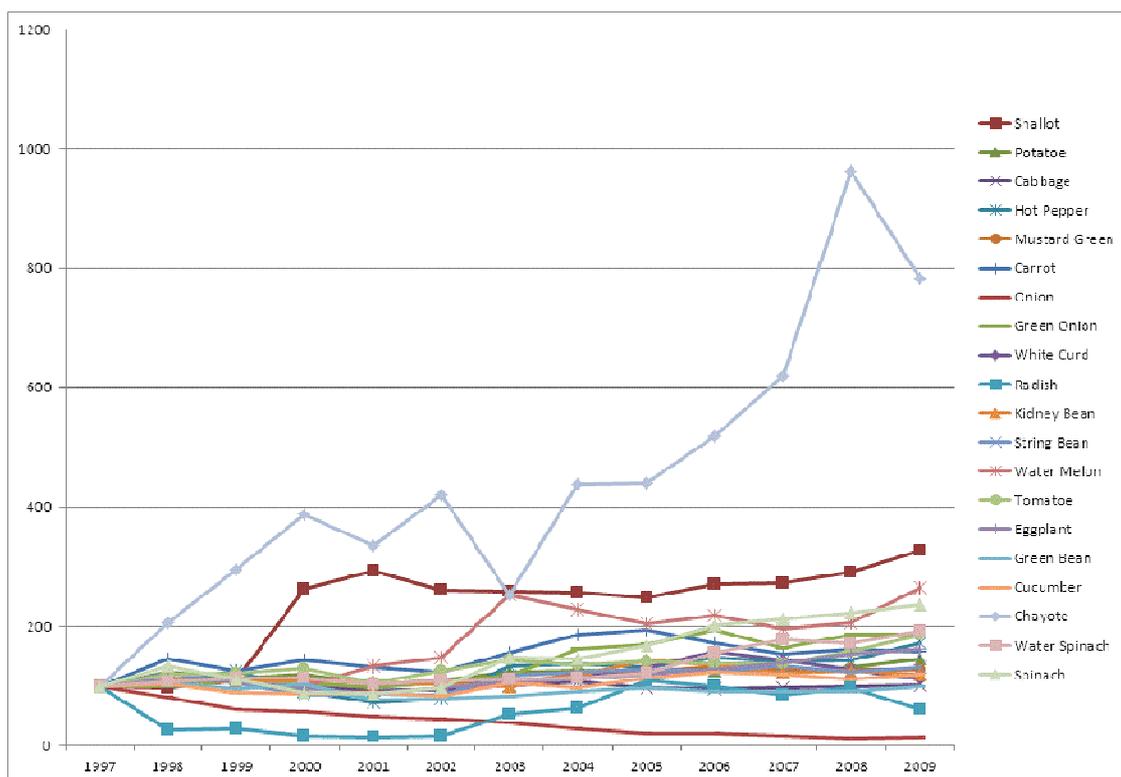


Figure 1. Indexed growth (1997=100) of vegetable production in Indonesia of a selection of major horticultural products. Source: Indonesian Central Bureau of Statistics www.bps.go.id

Table 1. Production of major vegetable crops in Indonesia in 1997. (x 1,000 kg)

1997=100			
Shallot	294,423	Kidney Bean	92,013
Potatoe	813,368	String Bean	368,352
Cabbage	1,338,504	Water Melon**	179,860
Hot Pepper	801,832	Tomatoe	460,542
Mustard Green	441,856	Eggplant	279,625
Carrot	227,321	Green Bean	295,312
Onion	102,283	Cucumber	489,595
Green Onion	294,426	Chayote	41,007
White Curd*	86,222	Water Spinach	188,594
Radish	49,547	Spinach	73,790

* Data available from 2003

** Data available from 2000

Source: Indonesian Central Bureau of Statistics www.bps.go.id

Green onions, leeks, and other alliaceous vegetables were one of largest growing products in terms of production of absolute volumes. The shift indicates increasing demand for alliaceous vegetables driven by food diversification of the urban population (World Bank, 2007).

Table 2. Value of traded edible vegetables and certain roots and tubers between ASEAN countries, Indonesia and the Rest of the World (2007-2009; value x 1,000 euro)

	Imports from ASEAN			Exports to		
	2007	2008	2009	2007	2008	2009
ASEAN	221,491	243,535	250,194	192,164	206,166	223,048
Indonesia	44,234	48,001	38,739	20,290	23,197	24,236

	Imports from Rest of the world			Exports to		
	2007	2008	2009	2007	2008	2009
ASEAN	na	676,981	922,037	na	1,130,635	1,593,801
Indonesia	134,558	150,904	175,661	36,982	26,557	47,586

Source: ITC calculations, based on COMTRADE

Indonesia is a net importer for vegetables, due to sharp rises in domestic demand (as mentioned above). However, the export market potential for vegetables has risen from 2007-2009, in both the regional ASEAN market, as well as the world market. Despite oppositely developing opportunities in the ASEAN market, Indonesia shows a stable to declining trend in exports to the ASEAN and to the rest of world (Table 2).

Looking at the specifics of Indonesia's export crops, the top exported vegetable products show either slight declines or volatile trends. The market for dried vegetables indicates to be on the rise. Shallots show stable developments (Table 3). Note also that sweet peppers are not included in the list of major exported crops, because its exported volume is too low.

Table 3. Major trade crops for Indonesia (value x 1,000 euro and volume x 1,000 kg)

	Indonesia vegetable export (value)		
	2007	2008	2009
Vegetables and certain roots and tubers	57,272	49,753	71,821
Manioc, arrowroot salem (yams) etc	27,701	18,826	22,555
Dried vegetables, shelled	6,780	7,325	22,121
Cabbages and cauliflowers, fresh or chilled	7,614	7,493	7,761
Frozen vegetables	3,506	2,838	7,075
Shallots	2,547	3,081	3,105
	Indonesia vegetable export (volume)		
	2007	2008	2009
Manioc, arrowroot salem (yams) etc	219,504	138,928	175,658
Dried vegetables, shelled	23,815	27,577	46,430
Cabbages and cauliflowers, fresh or chilled	47,352	38,927	44,904
Shallots	9,637	12,704	12,843

Source: Based on ITC calculations, based on COMTRADE

Competitiveness of Sweet Pepper and Shallot production in Indonesia

Indonesian producers have good access to high quality seeds. There are 3 seed companies who import seeds to the market. The quality of the seed is amongst the driving factors for the gradual quality improvement observed in the interviews which were held for this research. Also, the domestic market is demanding higher quality (for instance retail and fast food), particularly in the burgeoning retail market. Traders and exporters are increasingly noticing improvement to product quality, competitive pricing and continuity in supply. Although there is still a long way to go, Indonesia is starting to grasp the fundamentals to improve the overall competitiveness of its horticultural produce.

The production of shallots is divided into two seasons. One for the rainy (June to October), and the other for the dry season (November to March). The production of sweet peppers can basically take place year round, as production is generally realized in the controlled environment green houses. There is only a decline in production in the rainy season, due to the reduced lighting, impacting the photosynthesis of the crop. Table 4 below shows the distribution of the productive season of shallots and sweet peppers over the year. Overall the production circumstances provide a favorable situation for production in Indonesia.

Table 4. Distribution of the productive seasons for shallots and sweet pepper production in Indonesia

Vegetables Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Okt	Nov	Dec
	Yellow	Yellow	Green	Green	Green	Green	Green	Yellow	Yellow	Green	Green	Yellow
	Yellow	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow

Green = In season

Yellow = Low production

<http://www.alamandautama.com>

3. Indonesia's competitors for the export markets in sweet peppers and shallots.

In light of common trends in the export of vegetable products from Indonesia, we now turn to the exports of sweet pepper and shallots of Indonesia. Note that all statistics shown on sweet peppers, concern the variety of capsicum in general (both sweet and chilli peppers). This is due to the labelling in the Comtrade database, which does not allow differentiation between the two types of capsicum.

Capsicum

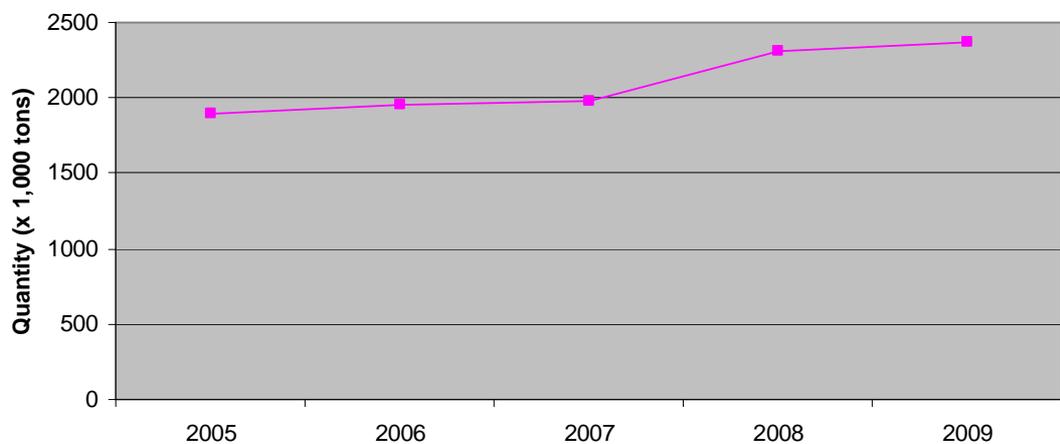


Figure 2. Worldwide export of Capsicum (2005-2009; x1,000 tons). Source: ITC calculations, based on COMTRADE

Figure 2 shows that the worldwide exports of capsicum have remained stable during the period of 2005-2009. The total export volume lies around 2 to 2.5 million tons. The main exporting countries were Mexico, Spain, The Netherlands, and the USA, accounting for about 75% of the worlds total exports.

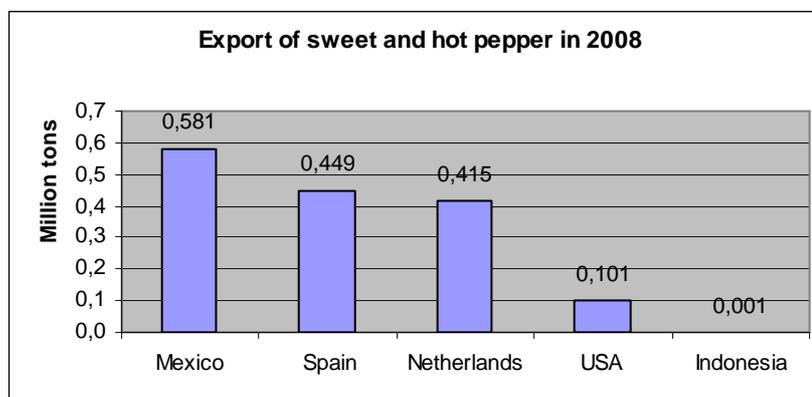


Figure 3. Ranking of the major exporting countries of Capsicum, and Indonesia (2008). Source: Comtrade.

The total export volume of sweet and hot pepper is increasing. The basis of export of capsicum is largely regional. The Netherlands for instance, exports largely to the United Kingdom and Germany, and Mexico largely to the USA.

In terms of the ranking of importing countries, one can also see that the major importing and major producing countries are located close together. Interesting to note in this respect is for Indonesia, is that Malaysia, as a neighbouring country, is positioned in the top 10 of importing countries, worldwide (figure 4).

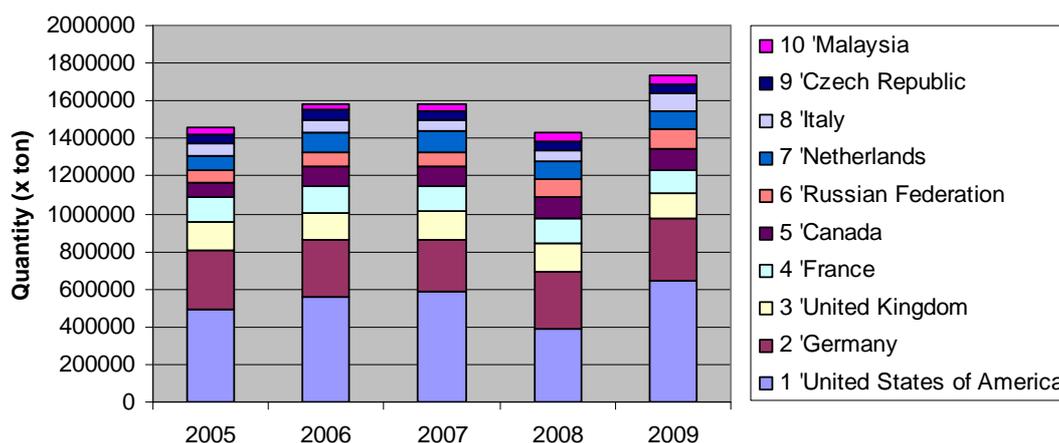


Figure 4. Ranking of Capsicum Pepper importing countries (2005-2009, x ton) Source: ITC calculations, based on COMTRADE

Shallots

Worldwide exports for onions shallots (undifferentiated in the Comtrade database) have shown a stable growing trend from 2005-2009.

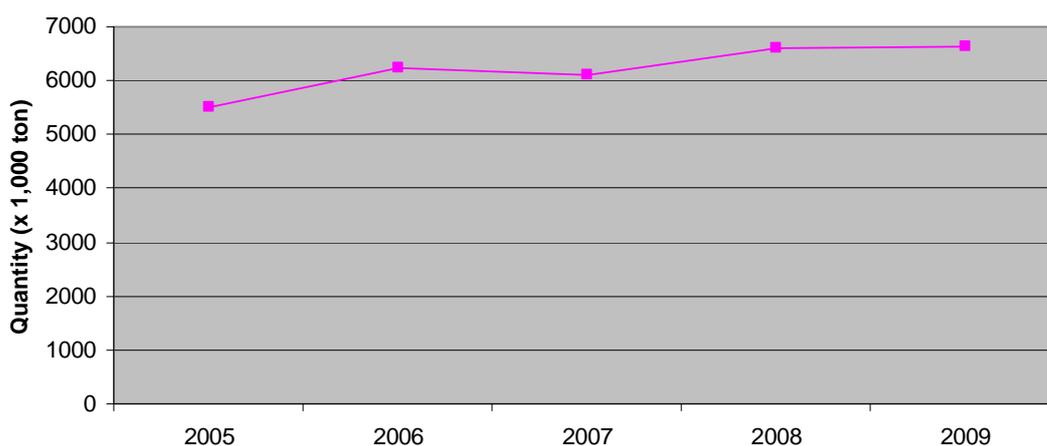


Figure 5. World export of onions and shallots (2005-2009; x 1,000 ton). Source: ITC calculations, based on COMTRADE

The largest exporters of onions and shallots are India, The Netherlands, and China. Their exported volume (figure 6) show that the sources for export are more fragmented over other

countries than in the case of Capsicum. This is due to the nature of onions and shallots of being a product that is more easily conservable, and thus easier to transport, than the fresh Capsicum produce. The top 3 exporting countries account for just about 50% of exported produce worldwide. Again, Indonesia is a small player on the export market for onions and shallots.

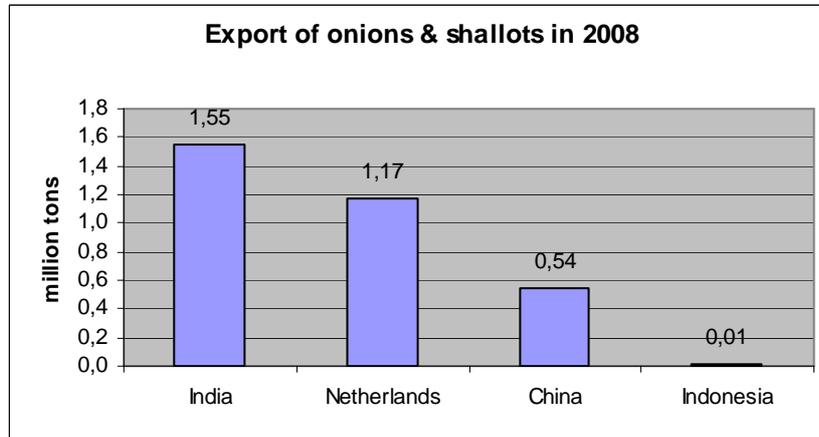


Figure 6. Ranking of the major exporting countries of Onions and Shallots, and Indonesia (2008). Source: Comtrade.

The better exportable characteristic of onions and shallots make the market much less dynamic compared to sweet and hot peppers with regards to export growth per country. Countries steadily increase their export volume but there are no countries with remarkable growth.

Figure 7 shows the major importing countries for onions and shallots. India, as a major exporter, markets its' onions and shallots to Bangladesh (number 2 importer worldwide). Malaysia (number 4 importer worldwide) is India's second largest destination country. The Netherlands exports mainly to the UK (3), Germany (4) and Russian Federation (6) China's major export market is Japan and Vietnam.

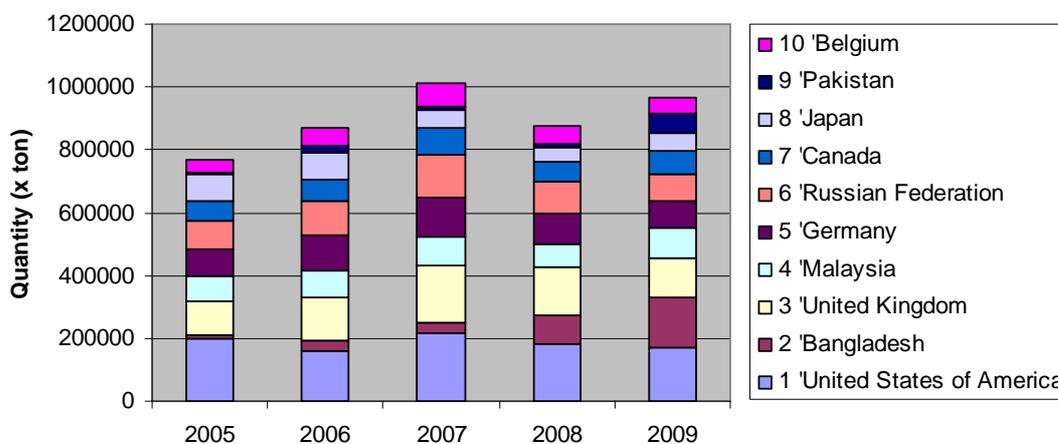


Figure 7. Ranking of Onion and Shallots importing countries (2005-2009, x ton). Source: ITC calculations, based on COMTRADE

Regarding opportunities for Indonesian shallots, the region, as with Capsicum holds the most potential. Malaysia is located close by, and Bangladesh is also relatively close in the region, providing additional competitive advantages in transport costs over the other major producing countries.

4. Vegetable consumption and sweet pepper and shallot sourcing in Malaysia and Singapore

In chapter 3 it was observed that Malaysia and Singapore host interesting markets for sweet pepper and shallots from Indonesia. This chapter will look more closely at the characteristics of these two markets.

Malaysia

Malaysia has a population of about 28 million people. The average yearly income in Malaysia around USD 6,000. Consumption of vegetables accounts for around 15% household expenditure (USDA, 2007). The volume of consumption in Malaysia has been rising consistently from 1997-2007 (table 5.)

Table 5. Per capita consumption of vegetables in Singapore (1997-2007; kg.)

Year	Per capita consumption
1997	31.04
1998	32.58
1999	34.33
2000	34.59
2001	35.07
2002	37.86
2003	34.07
2004	30.72
2005	40.41
2006	44.28
2007	45.21

Source: FAOSTAT

The Malaysian food and beverage market is becoming increasingly sophisticated and is supplied by both local and imported products. The strong economic growth in the late 80's and early 90's contributed to major changes in consumer purchases and consumption patterns. Malaysians living in urban areas are relatively brand conscious, and they prefer to shop in stores, which offer them convenience and good product selections. Hypermarkets/large format stores are now the dominant format in urban/metropolitan areas in Malaysia with about 45 to 60 percent of urban household shoppers using them as the main outlet for the majority of their packaged groceries. Traditional markets are losing ground, but are still important outlets for fresh fruits and vegetables. (USDA, 2009)

Singapore

Singapore has a population of around 5 million people with an average yearly income of around USD 30,000. Consumption of vegetables in Singapore consists of about 8.3% of household expenditure (USDA, 2007). Singapore's population is a big consumer of vegetable products. In terms of volume, consumption is nearly double of that of Malaysia (table 6).

Table 6. Per capita consumption of vegetables in Singapore (1997-2007)

Year	Per capita consumption
1997	71.7
1998	75.8
1999	79.4
2000	79.9
2001	82.3
2002	83.6
2003	84.8
2004	85.5
2005	84.1
2006	84.2
2007	85.7

Source: Tey et al. (2009),

Wet markets still represent the bulk of sales of products in Singapore such as vegetables, seafood, rice, eggs, chicken and pork; however, supermarkets including hypermarkets (Carrefour and Giant) are gaining market share in all retail food products. Younger consumers are increasingly shopping at supermarkets rather than the usual wet markets, as supermarkets operate longer hours, allowing consumers to shop after work. The cleaner environment and wide product range also attract younger consumers to supermarkets. (<http://www.austrade.gov.au>).

Main sourcing countries for Malaysia and Singapore for Sweet Pepper and Shallots

Both Malaysia and Singapore do import onions and shallots and peppers (sweet and hot). Malaysia with a population of 28 million logically imports more of both products than Singapore with just less than 5 million people. Singapore relatively imports more pepper based on its population than Malaysia does. The following provides a breakdown of supplying countries for Malaysia and Singapore respectively.

- Malaysia

Malaysia's sweet peppers imports generally originate from Thailand. It is likely that the mentioned volumes mostly refer to hot pepper as it is a much more commonly consumed than sweet pepper. However, a major competitor with Indonesian (sweet) pepper is likely to be the Thai (sweet) pepper.

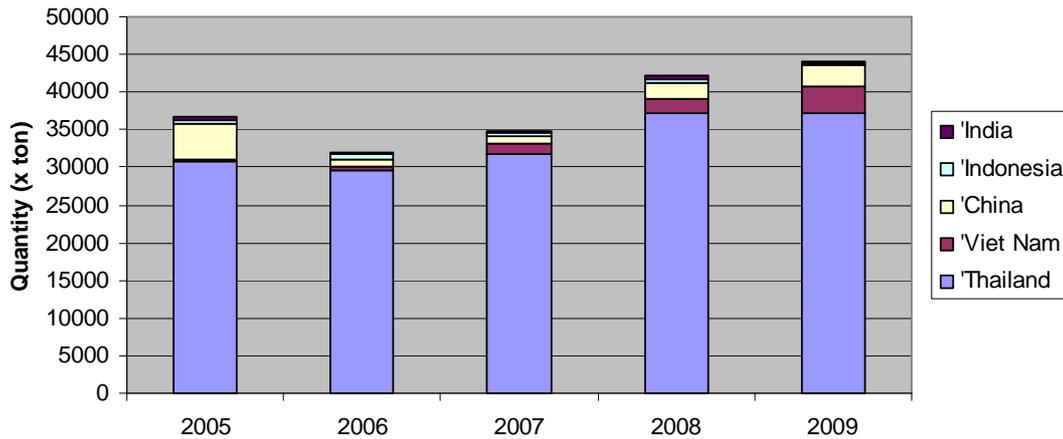


Figure 8 Malaysia's import of Capsicum according to source (2005-2009; x ton) Source: ITC calculations, based on Comtrade data

Malaysia imports most of the onions and shallots it consumes. Most originate from India.

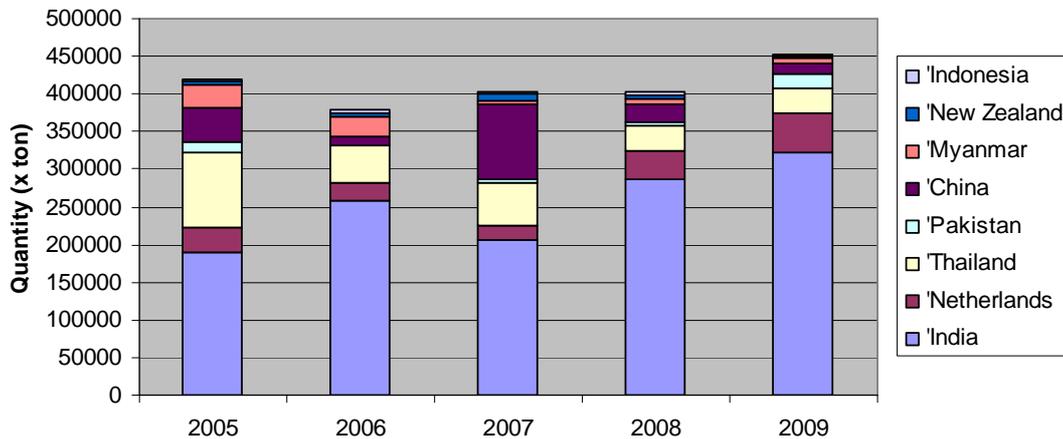


Figure 9. Malaysia's import of Onions and Shallots according to source (2005-2009; x ton). Source: ITC calculations, based on Comtrade data

- Singapore

As Singapore doesn't have a lot of land available, they are very import dependant. Singapore buys the bulk of its food products from neighbouring countries. Singapore's import of sweet peppers is lower than Malaysia in terms of absolute volumes. However, in terms of per capita import, Singapore's volumes are larger. This is most likely due to the fact that Singapore also functions as a trading hub, and re-exports a large part of its imports.

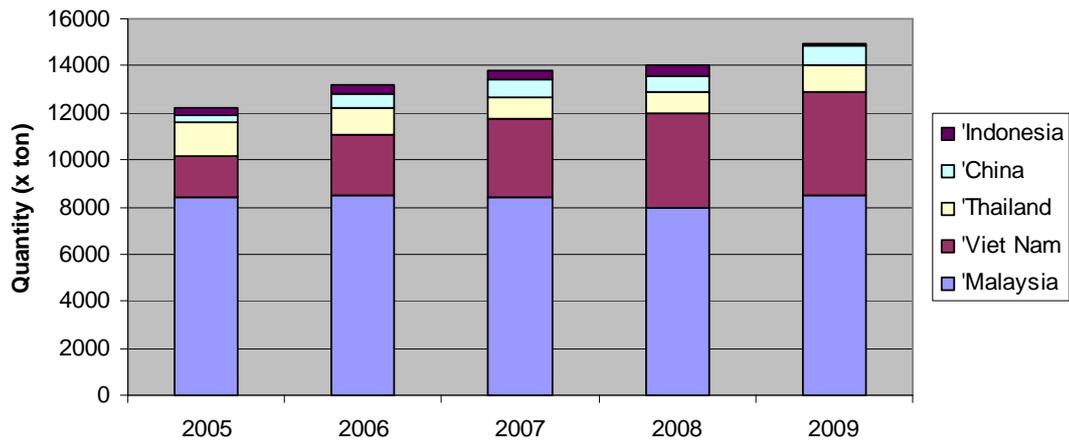


Figure 10. Singapore's import of Capsicum according to source (2005-2009; x ton) Source: ITC calculations, based on Comtrade data

Singapore imported about 50.000 tons of onions and shallots in 2009. As with sweet peppers, Singapore re-exports up to 50% of this imported quantity. (Midmore and Bribblecombe, 2001)

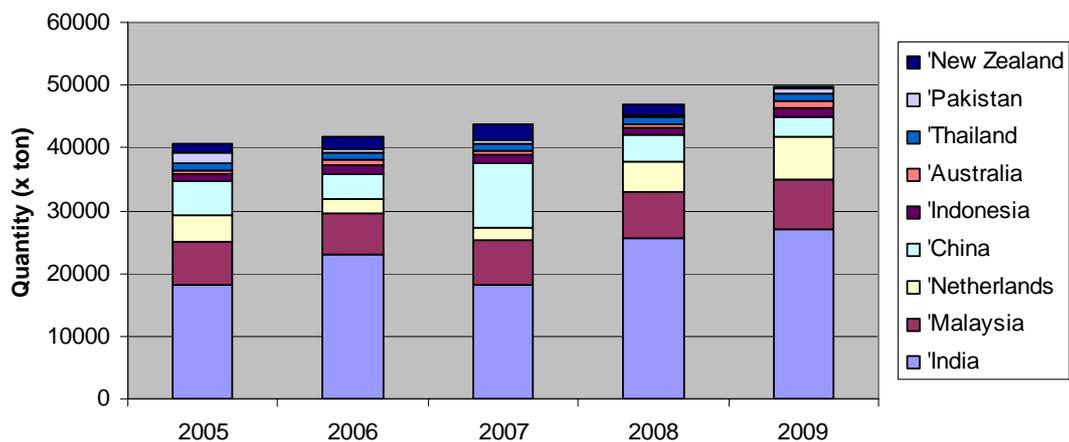


Figure 11. Singapore's import of Onions and Shallots according to source (2005-2009; x ton). Source: ITC calculations, based on Comtrade data

Indonesia's role in supplying to the markets of Malaysia and Singapore

The export volume of Indonesia is very small compared to any of these countries. Indonesia largely exports sweet and hot peppers to India, but is also penetrating into the markets of Australia, Malaysia and Singapore. Given the regional characteristic of the exported produce, these markets could well provide additional scope for the Indonesian produce.

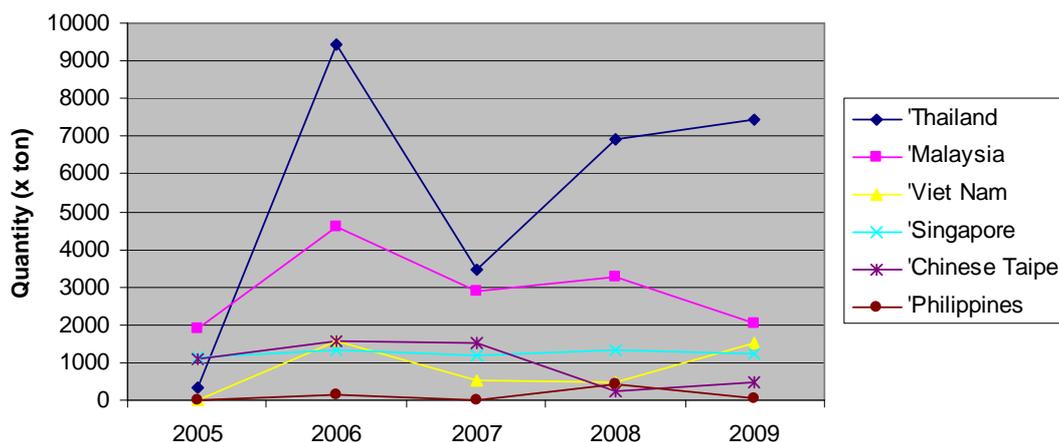


Figure 12. Indonesia's export of Onions and Shallots (2005-2009; x ton)

Indonesia only recently started recently to export sweet and hot pepper in small volumes. Currently export seems to be decreasing, most likely due to the small quantities being produced. As the production environment in greenhouses is not controlled enough yet, the exported quantities can show erratic trends (see figure 13). Malaysia and Singapore are the prime destinations for Indonesia's sweet peppers.

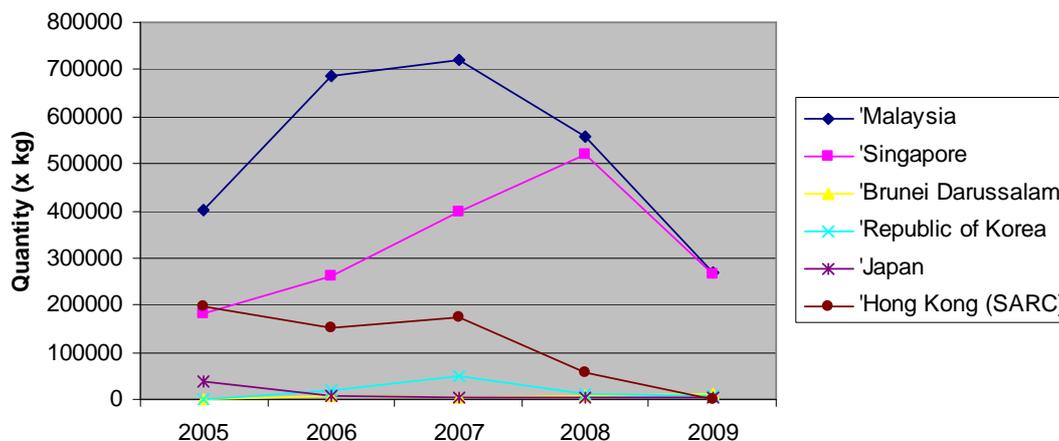


Figure 13. Indonesia's export of Capsicum to major markets (2005-2009; x kg)

5. Conclusions

Agriculture in Indonesia is in a difficult situation. There is a lot of import of fresh vegetable products, due to lack of efficiency in post-harvest infrastructure, and sound logistics. Figures show that import to Indonesia is rising, whilst opportunities on the export market, both regionally and globally, are rising. Through development on the domestic market, Indonesia is gradually improving on these aspects. The development in the domestic retail markets increasingly demand more quality and consistency in supply. These are aspects which will eventually contribute to strengthening competitiveness in future.

Specifically for the export of sweet pepper and shallot, the markets of Malaysia and Singapore show great potential to supply from Indonesia. Malaysia has a relatively large population, which is growing in terms of wealth. Singapore has a smaller population, but has the highest per capita income, and the most refined demand for quality produce. In exporting to these regional partners, Indonesia will have a natural competitive advantage over other supplier, due to the proximity of the trading countries.

As stated before, despite the opportunities, Indonesia has yet to show that it is able to take advantage. First and foremost, Indonesia will need to work on import substitution for fresh produce. Once progress is made towards outcompeting the imported produce, the gate will be opened for increasing Indonesia's competitive potential on the export market.

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International Trade Statistics of the International Trade Centre (ITC): <http://www.intracen.org/tradstat/>

United Nations Statistics Division (COMTRADE): <http://comtrade.un.org/>

Indonesian Central Bureau of Statistics www.bps.go.id

Interviews with private sector:

PT Saung Mirwan, Mr. Yohannes Wibisono (Marketing Manager)

PT ALAMANDA SEJATI UTAMA, Mr. Mulyady Chandra (Marketing & Research-Development Dept)

Bina Sarana Bakti Foundation, Mr. YP. Sudaryanto (Manager)

PT Gloria Brebes, Mr. Agusman (Director)

PT Momenta Agrikultura / Amazing Farm, Mr. Davy Rusli (Director)

Rijk Zwaan Export B.V., Jos van der Knaap (Export Development Manager)

Annex 1 Questionnaire used to guide interviews with private sector

1. Which vegetables do you produce?
2. Why did you choose to produce this vegetable (s)?
3. To whom do you sell your produce?
4. For which market do you produce?
5. Other characteristics:
 - i. How long the company has been established
 - ii. Plantation area (in ha)
 - iii. Also trading vegetable from other suppliers?
 - iv. Number of employees
6. Which trends in demand do you see?
7. Vegetable demand abroad
 - a. What do you know about the vegetables demand in export markets?
 - b. And in particular in Malaysia and Singapore?
 - c. What are key drivers for change in vegetable demand?
8. Competition
 - a. With whom are you competing within Indonesia?
 - b. and outside Indonesia?
 - c. What are your competitive advantages?
9. Export
 - a. Why was your export successful or not?
 - b. What do you need to know to export (more) successfully?
 - c. What is required to export to Malaysia and Singapore?
 - i. In terms of communication
 - ii. Network
 - iii. Quality demand
 - iv. Volume
 - v. Price sensitiveness
 - vi. Packaging
 - vii. Labelling
 - viii. Certificate
 - ix. Transportation
 - x. Promotion
 - xi. Payment system
 - xii. Product shelf life
 - xiii. Etc
10. Export opportunities
 - a. Do you see opportunities for more export in the future?
 - i. Of which type of products?
 - ii. To which countries?
 - b. Why?
 - c. Do you need support?
 - i. What type of support?
11. Contacts
 - a. How did you get in contact with your importer?
 - b. From which source do you get importer's contact information & needs?