





# **HORTIN II Co Innovation Programme**

Towards cost effective, high quality value chains

Market analysis for regional export of Indonesian vegetables

HORTIN-II Research Report nr. 12

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The Hague, The Netherlands, December 2009.



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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#### **SUMMARY**

Current export of vegetables is very limitied. Not much yet is known of the regional market, especially when compared to european market. To enable export, having high quality vegetables is of paramount importance. Second requirement is to understand the destination market and business culture. Most potential markets are Singapore and Malaysia.

# 1. Current export of vegetables

## 1.1. Export volume and value

Total export of Indonesia grew from 64,1 billion US dollar in 2003 to 139,3 milliard US dollar in 2008. Import grew similarly from 39,5 billion US dollar in 2003 to 116,0 billion US dollar in 2008. In 2008 – ten years after the Asia crisis, the global financial crisis started. According to the EIU (Economist Intelligence Unit) the Indonesian export will reduce in 2009 because of a decreasing foreign demand and lower prices of raw materials. The import will also reduce, because of lower investments within Indonesia. It is expected that in 2009 the total export will be 107,3 billion US dollar and import of 81,2 billion US dollar (EVD, 2009).

Of the total export, the export of vegetables is marginal. In the last decade it did not exceed 100 million US dollar. In terms of volume the export is mainly fresh vegetables, but in terms of value the processed vegetables contribute more. The growth rate of export value is larger for fresh vegetables than for processed (Johnson, 2008).

The export of vegetables mainly consists of cabbages, mushrooms and shallots (see table 1.1). In 2008, 1.3 million ton of cabbages was produced of which 3% was exported, 0.85 million ton of shallots produced of which 1% ton was exported (BPS, 2009; Hortikultura Deptan, 2009)

Table 1.1: Export volume and value of Indonesian vegetables from 2003 to 2008.

| Commodity   | Export Volume (kg) |             |             |             |             |             |
|-------------|--------------------|-------------|-------------|-------------|-------------|-------------|
|             | 2003               | 2004        | 2005        | 2006        | 2007        | 2008*       |
| Potatoes    | 19.012.711         | 16.790.767  | 25.693.792  | 97.657.771  | 43.872.252  | 8.584.661   |
| Tomato      | 671.436            | 3.594.486   | 2.061.505   | 1.024.767   | 2.671.887   | 2.078.757   |
| Shallot     | 5.714.269          | 4.637.264   | 4.259.344   | 15.700.666  | 9.356.977   | 12.313.860  |
| Garlic      | 1.005.898          | 39.290      | 18.045      | 17.070      | 135.753     | 30.933      |
| Cabbage     | 40.812.229         | 32.988.557  | 35.912.020  | 32.665.430  | 45.322.796  | 38.118.842  |
| White Curd  | 1.704.849          | 1.340.608   | 3.186.126   | 1.696.436   | 1.656.531   | 786.698     |
| Mushroom    | 16.113.207         | 3.333.723   | 22.558.977  | 18.351.038  | 20.571.404  | 19.452.421  |
| Cucumber    | 635.545            | 609.866     | 996.164     | 1.161.888   | 4.427.772   | 1.492.340   |
| Eggplant    | 1.729.494          | 1.072.657   | 1.121.518   | 362.155     | 274.363     | 579.486     |
| Carrot      | 660.983            | 313.386     | 214.883     | 439.505     | 9.267       | 6.428       |
| Green onion | 223.847            | -           | -           |             | 322         | 4.059       |
| Kidney bean | 17.883.745         | 216.580     | 46.000      | 247         | 12.223      | 72.000      |
| String bean | 525.479            | 164.977     | 518.343     | 1.357.607   | 329.444     | 1.183.513   |
| Spinach     | -                  | 12.046      | 21.107      | 348.807     | 489.406     | 352.917     |
| Hot pepper  | 1.110.553          | 1.879.374   | 5.617.739   | 8.004.450   | 6.814.226   | 6.402.692   |
| Others      | 12.696.014         | 40.499.466  | 50.432.595  | 57.437.560  | 73.403.252  | 84.467.727  |
| Total       | 120.500.259        | 107.493.047 | 152.658.158 | 236.225.397 | 209.347.875 | 175.927.334 |

| Commodity  | Export Value (US \$) |           |           |            |            |            |
|------------|----------------------|-----------|-----------|------------|------------|------------|
| Commodity  | 2003                 | 2004      | 2005      | 2006       | 2007       | 2008*      |
| Potatoes   | 4.392.346            | 3.739.473 | 8.516.112 | 12.547.444 | 4.920.910  | 2.892.197  |
| Tomato     | 289.472              | 2.599.702 | 1.128.266 | 792.829    | 1.420.451  | 1.631.705  |
| Shallot    | 2.747.061            | 1.888.929 | 1.520.423 | 6.365.994  | 3.491.809  | 4.533.837  |
| Garlic     | 376.634              | 43.166    | 7.308     | 11.182     | 260.405    | 204.427    |
| Cabbage    | 10.819.133           | 7.542.058 | 8.193.295 | 8.999.178  | 10.101.391 | 10.831.992 |
| White Curd | 450.458              | 475.755   | 927.175   | 437.736    | 255.892    | 179.648    |

| Mushroom         | 19.201.360 | 2.793.243  | 24.021.656  | 22.129.170  | 29.900.009  | 30.863.291  |
|------------------|------------|------------|-------------|-------------|-------------|-------------|
| Cucumber         | 602.583    | 339.454    | 871.682     | 857.547     | 926.811     | 1.378.194   |
| Eggplant         | 2.650.331  | 1.828.444  | 2.573.061   | 588.903     | 106.597     | 167.088     |
| Carrot           | 178.776    | 106.239    | 41.490      | 145.775     | 3.209       | 3.537       |
| Green onion      | 86.022     | -          | -           |             | 749         | 1.533       |
| Kidney bean      | 1.196.984  | 39.418     | 27.025      | 360         | 10.774      | 41.760      |
| String bean      | 367.252    | 59.784     | 84.956      | 882.911     | 69.565      | 482.093     |
| Spinach          | -          | 11.390     | 11.105      | 316.264     | 404.611     | 339.416     |
| Hot pepper       | 539.053    | 1.581.358  | 7.210.822   | 10.961.781  | 7.405.485   | 7.915.353   |
| Others           | 9.398.177  | 37.932.780 | 55.447.555  | 61.180.097  | 77.827.637  | 110.002.296 |
| Total Vegetables | 53.295.642 | 60.981.193 | 110.581.931 | 126.217.171 | 137.106.305 | 171.468.367 |

(Source: Hortikultura Deptan, 2009)

## 1.2. Export destinations

Indonesia has a surplus production of potato, cabbage, shallot and garlic (Mayrowani, 2005). As shown above these are also the major exported vegetables. Indonesian exports its vegetables mainly to Asian neighbours such as Malaysia and Singapore. Mushrooms are exported to a wider variety of countries including the USA and Middle East countries. A big amount of the exported shallots is going to Thailand (Comtrade HS data 2004-2008). In table 1.2 and figure 1.2 the export destinations of the three major exported vegetables are displayed in terms of exported value. The exported value of mushroom in this table is much lower than in the table above because this table refers to mushrooms of the genus Agaricus only.

Table 1.2: Export destinations and values of cabbages, mushrooms and shallots from 2003 to 2008.

|                       | Export value (in 1000 US \$) |       |       |       |       |
|-----------------------|------------------------------|-------|-------|-------|-------|
| Cabbages              | 2004                         | 2005  | 2006  | 2007  | 2008  |
| Malaysia              | 5,519                        | 4,877 | 5,572 | 4,783 | 6,410 |
| Taiwan                | 220                          | 1,860 | 1,472 | 3,069 | 1,550 |
| Singapore             | 1,758                        | 2,312 | 2,373 | 2,496 | 2,704 |
| Others                | 305                          | 81    | 20    | 89    | 361   |
| Mushrooms             |                              |       |       |       |       |
| Netherlands           |                              | 545   | 98    |       | _     |
| USA                   | 2,404                        | 1,490 | 498   |       |       |
| Middle East           | 26                           |       | 250   |       |       |
| Malaysia              | 214                          | 111   | 63    | 6     |       |
| Taiwan                | 114                          | 15    | 15    |       |       |
| Singapore             | 20                           | 129   | 365   |       | 6     |
| Others                | 15                           | 640   | 131   |       |       |
| Shallots (and onions) |                              |       |       |       |       |
|                       | 882                          | 745   | 2,489 | 1,506 | 1,800 |
| Taiwan                | 123                          | 289   | 497   | 342   | 66    |
| Singapore             | 869                          | 507   | 823   | 923   | 643   |
| Viet Nam              |                              |       | 607   | 152   | 198   |
| Thailand              | 10                           | 55    | 2,705 | 619   | 1,874 |
| Others                | 68                           | 25    | 20    | 20    | 108   |

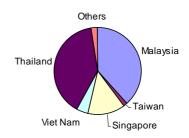
(Source: Comtrade HS data 2004-2008).

<sup>\*</sup> sign refers to "not yet-fix" data (not expected to change much)

# Destination of cabbage in 2008 (% of exported value)

# Others Singapore Malaysia Taiwan

# Destinations of onion and shallots in 2008 (% of exported value)



# Destionation of mushroom in 2006 (% of exported value)



 $Figure \ 1.1: Export \ destinations \ of \ cabbages, \ mushrooms \ and \ shallots \ in \ 2008 \ in \ percentages.$ 

(Source: Comtrade HS data 2004-2008).

## 2. Successes and Risks

#### 2.1 Successes

Export of vegetables produced in Indonesia is currently still very low. Some of its successes are shown in this chapter.

Indonesia has a good climate to produce vegetables. Neighbouring countries have similar climate and therefore its climate is not a comparative advantage to Indonesia. However, labour is a factor which distinguishes Indonesia from other countries in the region such as Malaysia and Thailand. Indonesia has a very large labour force, good qualified labour and lower wages. Labour is a major comparative advantage of Indonesia compared to Malaysia and Thailand. Indonesia has to capitalise on this advantage as it loses on other aspects like infrastructure and investment climate (see table below).

Table 2.1: Comparative advantage for export to regional market.

|                      | Export for regional market |          |          |  |
|----------------------|----------------------------|----------|----------|--|
|                      | Indonesia                  | Thailand | Malaysia |  |
| Production factors   |                            |          |          |  |
| Land                 | 0                          | 0        | 0        |  |
| Labour               | +                          | -        | -        |  |
| Cimate               | 0                          | 0        | 0        |  |
| Infrastructure       |                            |          |          |  |
| Logistics            | -                          | +        | +        |  |
| Distribution centres | -                          | +        | +        |  |
| Miscellaneous        |                            |          |          |  |
| Business contacts    | -                          | +        | +        |  |
| Knowledge            | 0                          | 0        | 0        |  |
| Investment climate   | -                          | +        | +        |  |

<sup>+</sup> comparative advantage above competitors

(Source: Stallen, 2003)

As labour is the comparative advantage which Indonesia has, it is recommendable to focus on labour intensive vegetable production.

Cucumber is one of the few crops showing a steady increase of export. Indonesia is also getting started to export spinach in growing volumes. Export of other vegetables is quite fluctuating or decreasing in the last five years.

Most vegetables are exported to the region (Malaysia, Singapore, Taiwan and Thailand). But also further destinations have been successfully targeted such as the Middle East, USA and the Netherlands. In South Korea the consumption of vegetables is the largest of the world. Although it has a huge vegetable consumption, the country is still able to export vegetables. For the near future this country will demand more vegetables of high quality. Still export of vegetables of the highest quality to Singapore is seen as one of the best possibilities (EVD, 2009).

Saung Mirwan started in 1984 with its hydroponics vegetable venture in Bogor, in the Puncak region which is the main vegetable region close to Jakarta. The company produces paprika, melons, cherry tomatoes, beef tomatoes, and chillies. They began exporting paprika and cherry tomatoes to Singapore, Taiwan, and Hong Kong. But around 2000 they became non-competitive to Singapore because of high air transport costs (1 dollar of air transport for 1 kg of paprika that earned them gross 3.5 dollars in Singapore). Because of the high transport costs, Saung Mirwan decided to move to more high value crops such as romaine, snow peas, flowers, flower

o equal

<sup>-</sup> disadvantage compared with competitors

seed for export to Taiwan and Japan. They still produce paprika with other local niche products, but aim more at the high-end domestic market (Worldbank, 2007).

*PD. Hikmah Potato Company* (Pangalengan) is another commercial farm selling to various food industry segments. They also have a joint venture with the giant Thai CP (starting to export vegetables from Indonesia to Thailand and the Philippines), with technical assistance from CIRAD, focusing on carrots (Worldbank, 2007).

Amazing Farms was established in 2000. The company has a multi-location strategy to spread risk due to strong winds and rain damage to delicate greenhouses. Between mid 2003 and mid 2006, the company's sales rose 5 times and they began exporting to Singapore (Worldbank, 2007).

Table 2.2: Production centres or company exporting vegetables

| Production Centre /<br>Company   | Export   | Commodities  | Source of Information   |
|--|--|--|---|
| NAD - PT Global Realty<br>Indonesia / Hermes   | Singapore  | Tomatoes, Potatoes,<br>Cabbage, kembang kol, Red<br>Pepper, Broccoli, Onion, and<br>Tamarillo  | http://www.theglobejournal.com  |
| Sumatera Utara: Medan -<br>Pasar Induk Medan   | Singapore  | Multiple (Mainly Cabbage),<br>also fruit   | http://bimandiri.wordpress.com<br>http://myudiman.blogspot.com                                |
| Sumatera Utara: Medan –<br>Perdana bumi bahari<br>(agrobisnis group)   | Jepang,<br>Singapore<br>, UE   | Potatoes Sweet Pepper,<br>Onions, Lettuce, Po Chai,<br>Horinso, Tan'O, Garlic,<br>Shallots, Brocolli, Mushroom,<br>Scallion, etc   | http://www.gratisiklan.com  |
| Jawa Tengah: Brebes<br>DIY: Jogjakarta<br>Jawa Barat: Karawang,<br>Purwakarta, Subang,<br>Indramayu, dan Cirebon                                 | NS   | Mushroom   | http://agrikultural.blogspot.c<br>om  |
| Sumatera Utara: Berastagi, Simalungun dan Karo Jawa Barat: Bandung, Majelengka, Bandung Barat dan Garut Jawa Timur: Malang, Jember dan Kota Batu | Malaysia,<br>Singapore   | Sumatera Utara: Cabbage,<br>Tomatoes, Potatoes, Scallion,<br>Carrot, Red Pepper, Radish<br>and Cauliflower,<br>Jawa Barat: Potatoes, Red<br>Pepper, Carrot, Sweet Pepper<br>and Tomatoes | http://agrikultural.blogspot.c<br>om<br>http://www.agrina-<br>online.com<br>http://umkm.or.id |
| Jawa Tengah: Boyolali,<br>Dieng Wonosobo   | NS   | NS   | http://suaramerdeka.com   |
| Sulawesi Utara: Tomohon,<br>Tompaso Baru Minahasa<br>Selatan   | Singapore<br>, Malaysia,<br>EU, USA,<br>Cina,<br>Korea,<br>Japan,<br>India | NS   | http://daily.vibizportal.com  |
| Jawa Barat: Majalengkang<br>Jawa Barat: Pangalengan,<br>Lembang Bandung,<br>Majalengka   | Taiwan<br>Singapore  | Red Pepper, etc Pangalengan : Chinese Cabbage, Red Pepper, Tomatoes and Scallion.  | http://id.wikipedia.org http://www.opensubscriber.c om  |

| Jawa Timur: Malang,<br>Magetan, Tulungagung | Taiwan | Cabbage   | http://www.kakulidah.co.cc                |
|---|--------|---|---|
| Sulawesi Selatan: Malino                    | NS     | NS  | http://www.antara-<br>sulawesiselatan.com |
| Lampung Barat                               | NS     | Tomatoes, Cabbage, String Bean and Garlic.                  | http://202.146.5.33/kompas-<br>cetak      |
| Agrindo Nusantara, PT                       | NS     | Paprica, tomeau   | Listed at NAFED                           |
| Alamanda sejati Utama PT                    | NS     | Potato, tomato, cabbanges, chili, carrots, turnips, avocado | Listed at NAFED                           |
| Bali Kencana, CV                            | NS     | Black pepper  | Listed at NAFED                           |
| Banjuwangi Timur, CV                        | NS     | Onion, shallot, leek, garlic                                | Listed at NAFED                           |
| Indo Yasai Wisesa, PT                       | NS     | Potato, sweet potato  | Listed at NAFED                           |
| Java Green Agricltural<br>Produce, PT       | NS     | Cabbages, peas  | Listed at NAFED                           |
| Losari Laksana, PT                          | NS     | Chili   | Listed at NAFED                           |
| Nidema Intipratama, PT                      | NS     | Cabbage   | Listed at NAFED                           |
| Pohon Cabe                                  | NS     | Chili   | Listed at NAFED                           |
| Purnama Raya, CV                            | NS     | Potato  | Listed at NAFED                           |
| Putra Agro Sejati, PT                       | NS     | Cabbage   | Listed at NAFED                           |
| Sarimakmur Tunggal<br>Mandiri, PT           | NS     | Gambier, frozen beans, carrots and turnips, pepper          | Listed at NAFED                           |
| Wahana Grahamakmur,<br>PT                   | NS     | Potatoes  | Listed at NAFED                           |

NS = Not Specified

List of the vegetables exporter, registered on National Agency for Export Development (NAFED), a formed to act as a special service agency of the Ministry of Trade.(http://www.nafed.go.id/profile.php)

#### 2.2 Risks

For the Agricultural Export Competitiveness project (AECP) HORTIN mentions that development and testing of a certifiable protocol for safe food production and product quality, is probably the most relevant. The hazards for consumers and bottlenecks for product quality were identified, with on the one hand a Hazard Analysis and Critical Control Points Analysis (HACCP), and on the other an analysis of the perception and awareness of stakeholders in the production chain. This was followed by the development of a protocol for Good Agricultural/Hygienic Practice (GAP) in the vegetable supply chain, on the basis of the main bottlenecks identified in the analysis. The protocol was tested in a pilot project with farmers and other stakeholders in the supply chain. Lastly, the possibilities were explored of establishing food safety certification and of setting up an independent assessment agency. The project concluded that a key problem to be addressed in food safety certification is that of the lack of information regarding pesticide admission and labelling. Recommendations for the private sector were to work on raising awareness on GAP and the importance of improving product quality, presentation and handling (Worldbank, 2007).

Major bottlenecks in exporting vegetables from Indonesia are still to be found in production. Due to failures in production, the quality is not good enough to be exported. Problems in horticultural development in Indonesia are as follows:

- 1. Mostly small scale production resulting in not optimal usage of appropriately agricultural technologies
- 2. Low and not professional entrepreneurship and management at farmers level, partly due to weak functioning organisation of farmers
- 3. Low and various standards of horticultural products
- 4. Unavailability of seeds from best varieties
- 5. Not optimal Pest Control System because lack of knowledge
- 6. There is no special area for horticultural products except for highland agricultural products

- 7. Limited infrastructure (roads, irrigation system, transportation, agricultural machineries and tools)
- 8. Unavailability of information from the production actors to Promotion centre
- 9. Unavailable supporting policies from government in product promotion implementation in national and international level
- 10. Added values are still for traders or buyers side, not for farmers
- 11. Generally, position of horticulture in household or personal budget allocation is relatively low.

(Source, Hortikultura Bandung, 2009)

# 3. Requirements

When exporting several important issues are identified that must be considered regarding market access for vegetables:

- 1. Consumer behaviour trends and consumption of vegetables in destination country; in order to be able to meet demand and identify chances one should consider the general consumption patterns and market structure of the targeted country.
- 2. International trade; analyse import and export flows to see which countries are the main suppliers of specific products to the targeted market.
- 3. Food safety and quality control standards and requirements such as the legislative framework, HACCP. Compliance with food quality and safety requirements is a prerequisite for major export markets.
- 4. Maximum Residue Limits (MRL), and
- 5. Packaging demands, including the retailer standards.
- 6. Offer a broad assortment, not just one product (Van Galen, 2005)

As mentioned in the previous section, quality of produce is of paramount importance when exporting vegetables. Quality has to be good, otherwise there is no trade. As an example of what the export market requires from a certain crop and chain management, please view the detailed list reported by CAMIB for sweet pepper. This case refers to the German market, but differences with the market in Singapore are expected to be small (See: CAMIB 2006)

Another important aspect of export is, once you have very good quality produce, is how to do business in other countries. Every country requires a different approach. Especially the way of doing business varies among the different cultures and institutional settings. Below a number of guidelines are mentioned per country in the region of Indonesia.

#### Singapore

Singapore is a relatively small market, but its consumers have a large purchasing power. Shopping occurs more and more in big malls including supermarkets.

Market entry is best done through a Singapore agent, distributor or trade company. These organisations can be found for example within the Singapore International Chamber of Commerce or at trade fairs, which are very common in Singapore. To be successful in Singapore you need to make use of as many contact as you have, gather market information beforehand and use distributors which know their specific market and have an extensive network. Depending on the type of the product, the importer (distributors/agencies) has a margin of 20 to 40%. In the retail sector margins of 100% are even common. For all produce that enter Singapore, an import permit is required. This document can be requested from the TradeNet. Most products can be imported freely. In Singapore English is spoken, but also Chinese, Malay and Tamil. Singapore people prefer in general the 'no nonsense' approach: mention the subject and your questions when making appointments. It is also important to make an appointment with the person who has the authority to make decisions. (EVD, 2009)

#### Malaysia

Also in Malaysia exporting is best done through a local agent. Especially when doing business with the government it is recommended to select a Bumiputra-entrepreneur. When doing business in Malaysia it is important to know the ethnical issues. The Bumiputra, the native Muslim Malay, are the largest ethnical group and are strongly represented in the government and state owned businesses. Many entrepreneurs in Malaysia are also Chinese and to a lesser extend Indian. To have a personal relationship is of high importance. An agent is commonly appointed for a certain time period, for example one or two year. When a contract with an agent is being developed it is recommended to ask assistance from a local lawyer.

Malaysia is seen as one of the most emergent markets in the region, after Singapore. International supermarket branches are growing in number and volume. Presents are in general not exchanged as they may be seen as bribery. If business relations invite you at home, a small and practical present is respected. (EVD, 2009)

Taiwan

Similarly as to the Singapore people, it is advisable to be clear and to the point when doing business. If Taiwanese believe they can do business with the exporting party, things can go fast. Deals are seldom made during official meetings, but after them like during diner.

Presents are common while doing business in Taiwan. These are given during the first meeting. At business cards one side has to show the information in English, the other side in Chinese. (EVD, 2009)

#### Vietnam

Vietnam is a growing trading country. It is trying to function as a regional head office for suppliers of horticultural products who want to enter the Asian market. More and more vegetables of high quality are being imported. This also increases the competition at the local market who feel forced to producer higher quality as well. Vietnam stimulates trading products at their market by:

- Promoting products which come from safe production areas being coupled to a brand name.
- Creating efficient networks of production/trading to offer quality guarantees to consumers.
- Improving consumer marketing by developing wholesale companies and trading centres. (EVD, 2009)

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