



Supplying the market of Tomorrow

Vietnam Garden South-East Asia



Sigrid Wertheim-Heck, 16 Jun 2014
Forum Horticultural cooperation Netherlands-Vietnam



- **Professional services firm**
 - Strategic Management Consulting
 - Operations
 - Research & Development
- **Value chain driven**
 - Multi-disciplinary teams in Vietnam and in the Philippines: 120 staff
 - 360° approach
- **Located in Asia**
 - Vietnam offices: Hanoi, Dalat, HCMC, Can Tho
 - Philippine office: Manila
 - Working in Vietnam, Thailand, Indonesia, Cambodia, Laos, China, Malaysia, Japan and Philippines

Fresh Studio mission



“ Grow better lives from farmers to consumers, by making our clients successful in the production and marketing of sustainable food. ”



Value chain approach



- Delivering the promise from seed to mouth and ... back



Expertise and services



Supply



360° value chain
approach



Demand

■ Pre- and Post harvest

- Agronomy
- Aquaculture
- Livestock & dairy
- Plant protection
- Field trial management
- Pre harvest
- Post harvest
- Quality assurance
- Food processing
- Logistics

■ Marketing & business development

- Sector analysis
- Market research
- Consumer research
- Growth strategy
- Access to finance
- Branding
- Communication
- Marketing campaigns
- Graphic design

Selection of clients





Vietnam – economy of scale

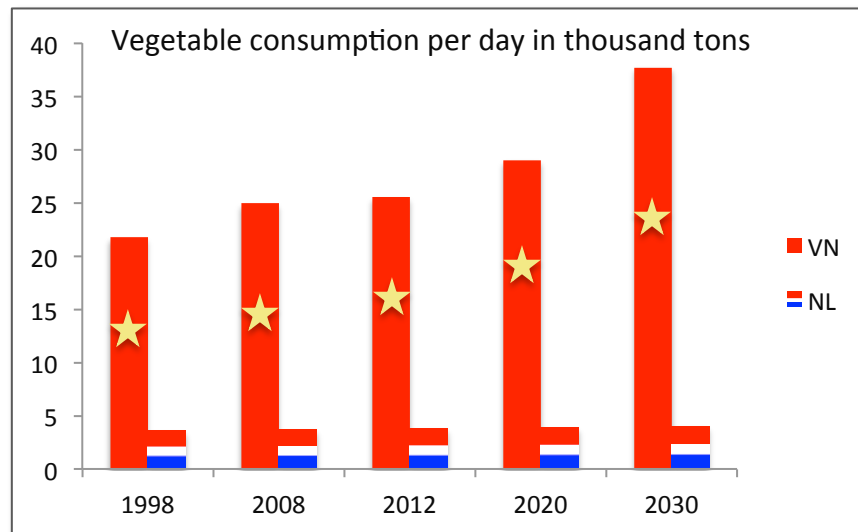
Demand for horticultural products



Economy of scale



HANOI consumes **50%**
of the **total** vegetable
volume consumed in
The Netherlands





Preparing for the future

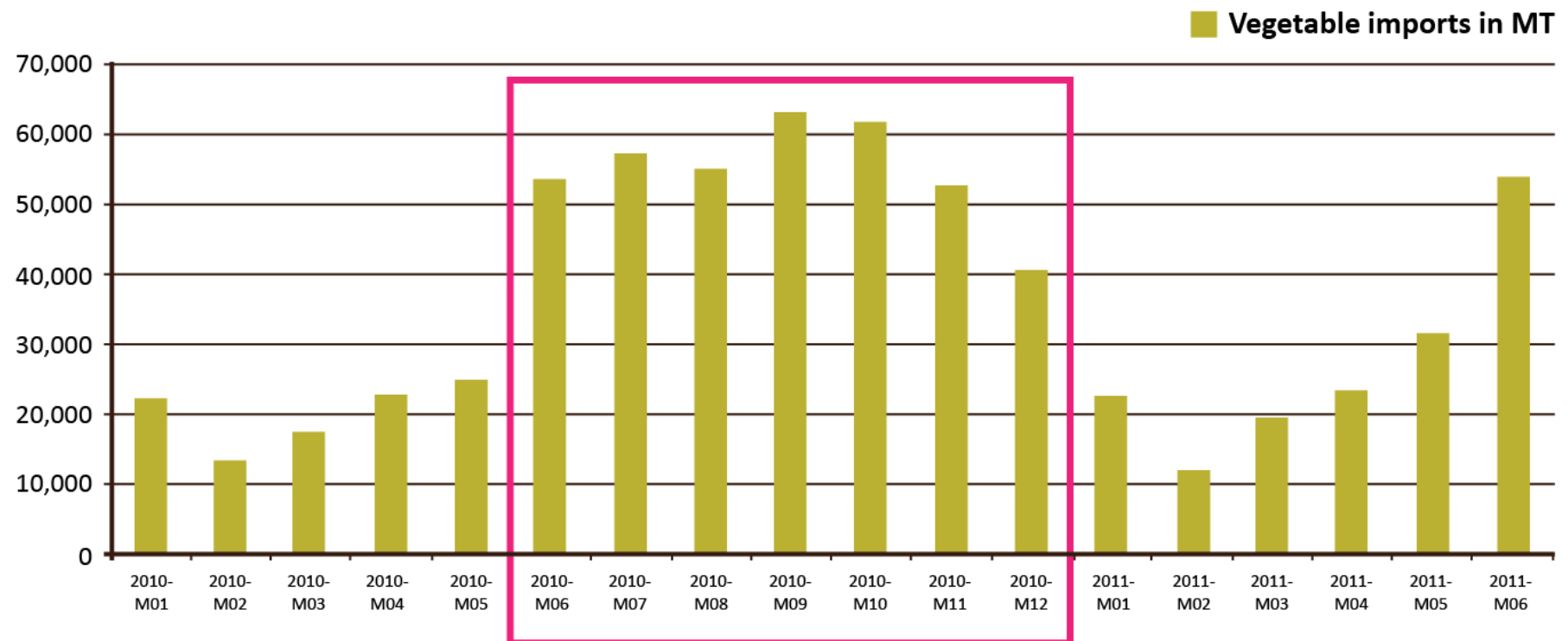
Why accelerating horticulture ?



Seasonality



- Imports from China increasing during off-season



Source: Compiled by Fresh Studio from the dataset International Trade Centre UNCTAD/WTO 1994-2015

Climate change



- Increasingly problematic



Drought, food shortage affects 34,000 in Central Highlands



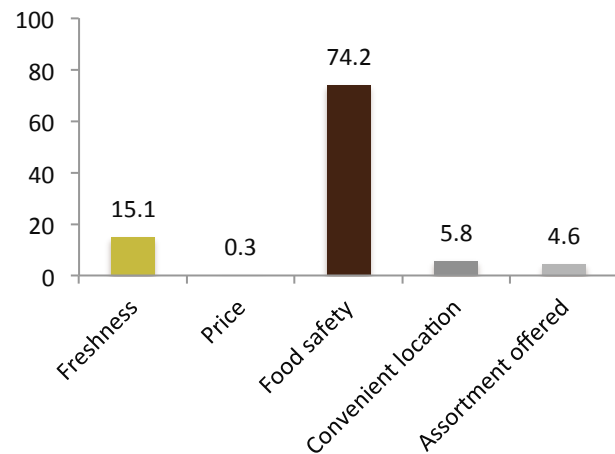
As Flood Recedes, Vietnam Faces Food Shortages

Food safety

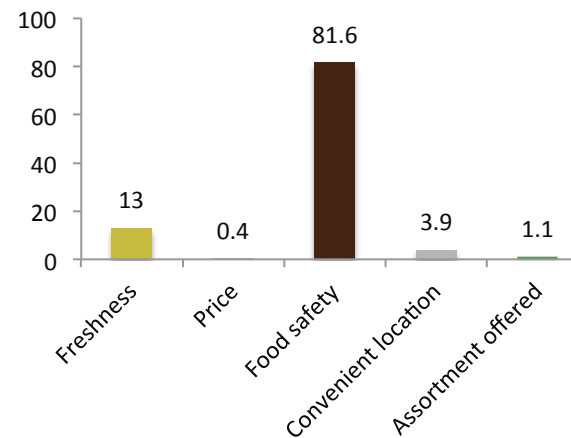


- 94% of consumers is concerned about food safety
- Food safety is more important than freshness:

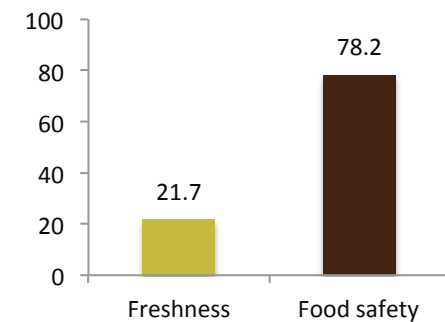
What is most important to you when shopping for vegetables (% respondents)



What is most important to you when shopping here? (% respondents)



What is more important to you in purchasing vegetables? (% respondents)

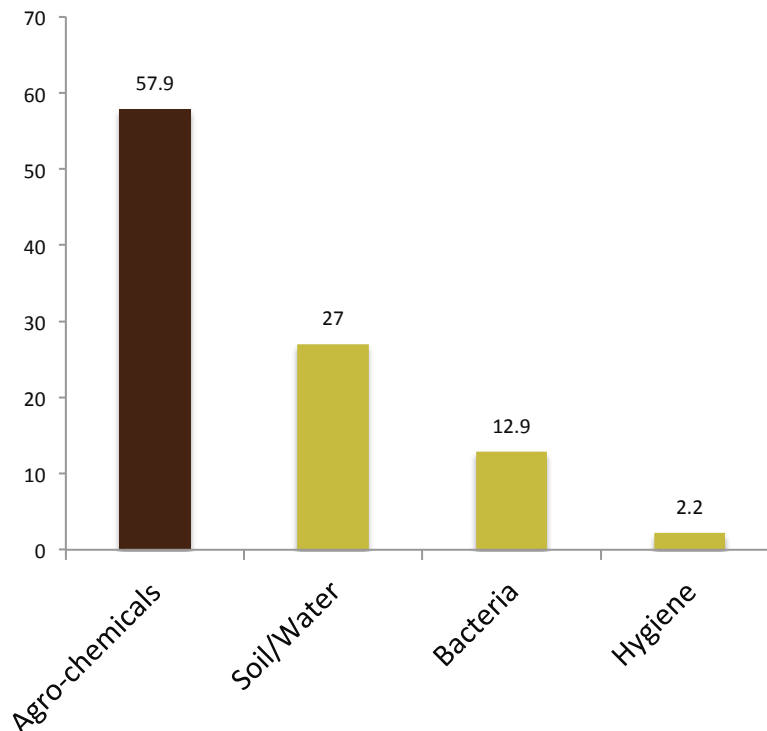


Food safety (2)



- Agro-chemicals are perceived the biggest food safety risk

*What do you think is causing vegetable food safety risks?
(% respondents)*



Source: Fresh Studio urban Hanoi consumer survey (C=1400), 2012

Harmful insecticide in Chinese potato in guise of Da Lat home-grown variety

On June 22, food inspectors from Da Lat City raided potato storage facilities in Da Lat Farm Produce Market and Trai Mat area in Ward 11 and caught red-handed crooked sellers washing and coating Chinese potatoes with red soil to disguise them as Da Lat home-grown potatoes.

Banned chemical used to stimulate bean sprouts

Last updated: Tuesday, March 02, 2010 10:28



A team of inspectors, including those from Ha Giang Market Management Department, destroyed hundreds of kilograms of bean sprouts this week.

Veggies, fruits fail to pass pesticide test

More than 11 percent of vegetables and 15 percent of fruits sold in Vietnam have higher levels of pesticide than allowed by the Vietnam Food Administration, the agency has said.



Popular vegetable declared unsafe for health because of pesticide

In a recent meeting on food safety, the Ministry of Agriculture and Rural Development said that Rau Ngot, a popular vegetable in Vietnam, is unsafe for consumption because of high levels of pesticide residues.

Pesticide use rampant amongst Vietnam farmers

The overuse of fertilizers and chemicals by Vietnam's farmers was discussed at a meeting attended by labor and agriculture officials on December 4 in Hanoi.

Toxic pesticides used by vegetable farmers

Bitter cold weather in northern parts of the country has badly affected agricultural produce, leading to a shortage of supply of fresh vegetables as demand increases for the oncoming Tet holiday season (Lunar New Year).

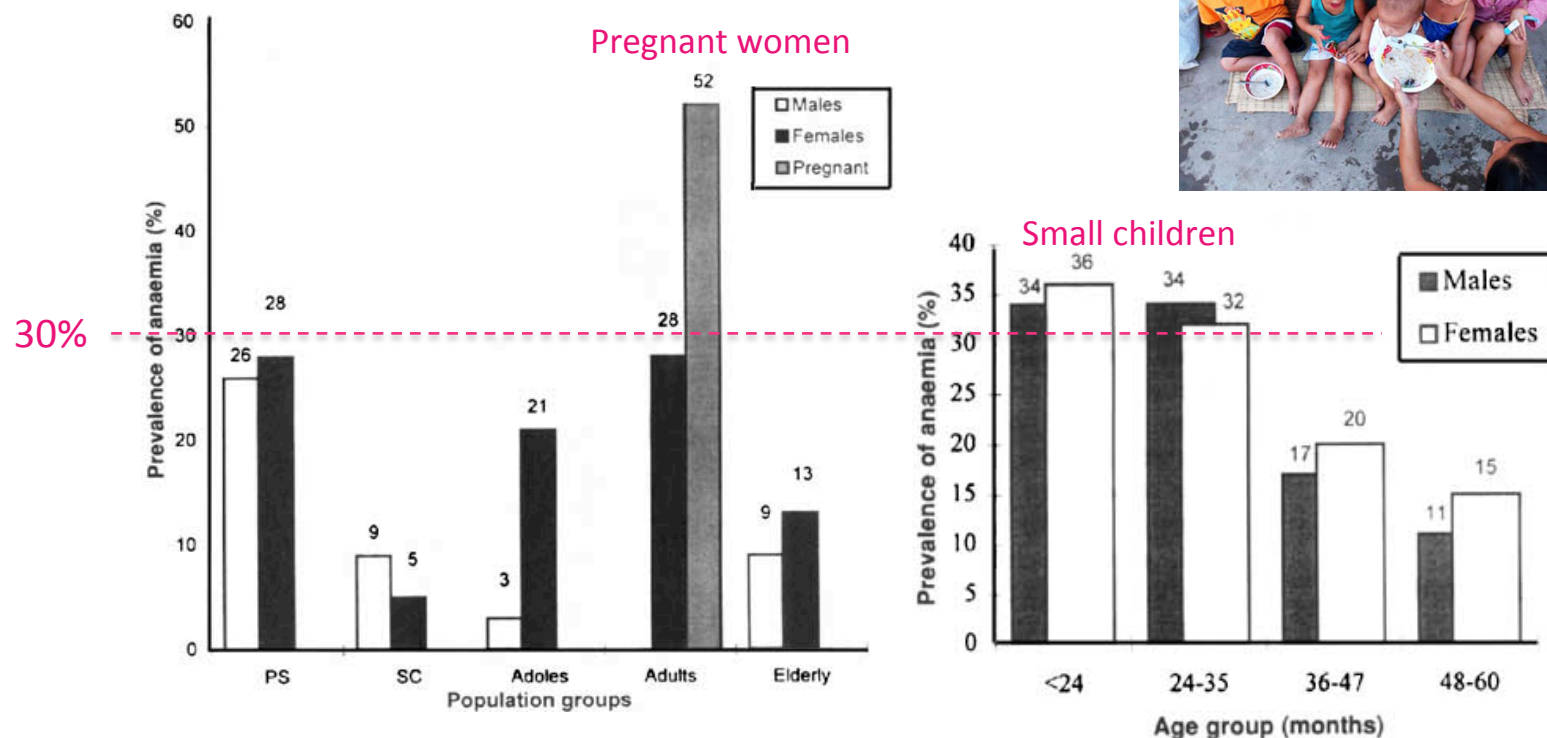


Nutrition



- Micro-nutrient deficiency :
 - 50% of Vietnamese children fail to get enough vitamins or iron
 - 52% of pregnant women show high iron deficiency levels

Anaemia prevalent among pregnant women and small children:



Nutrition (2)



- Vietnam: Severe Vitamin A deficiency

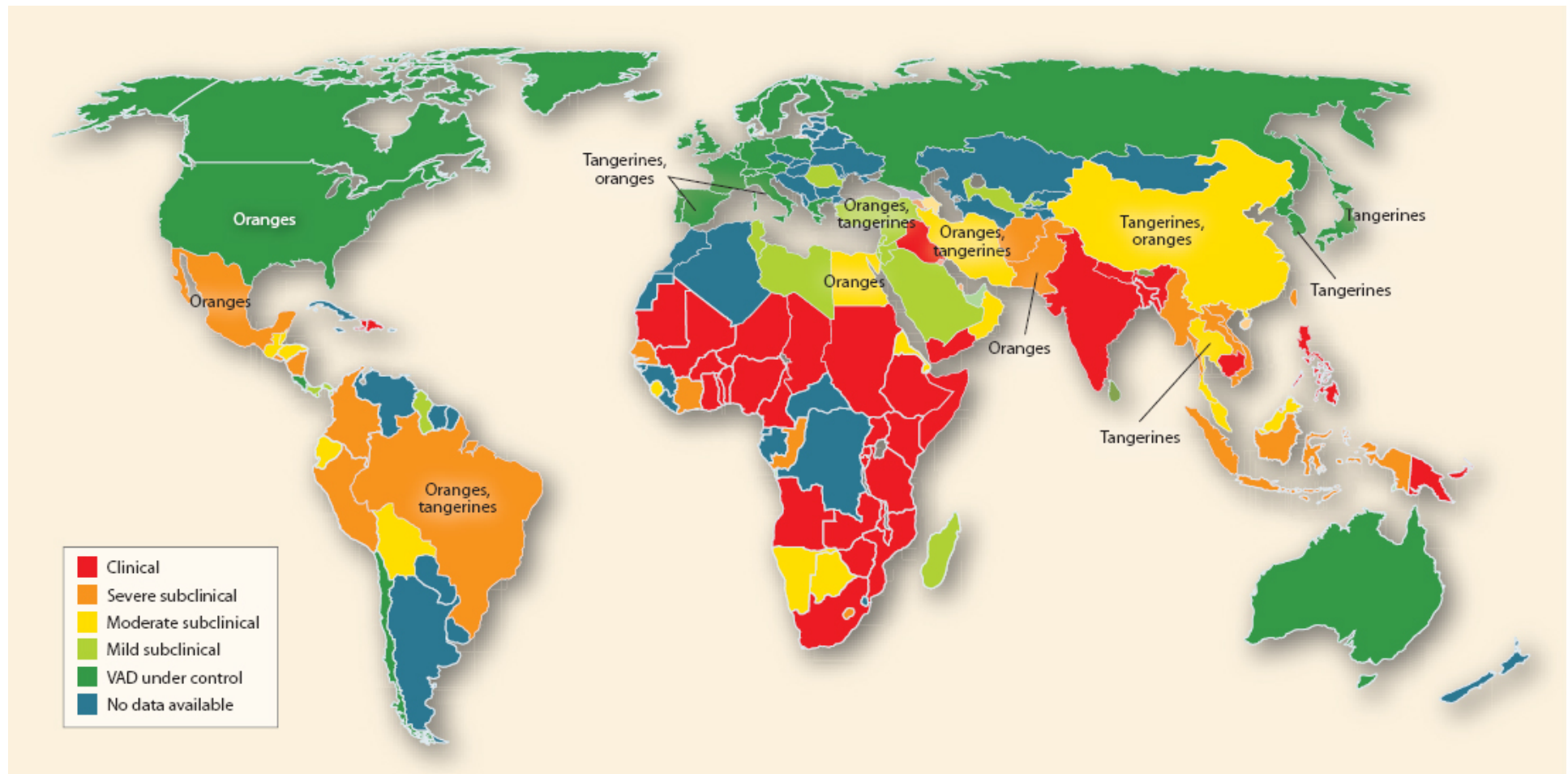


Fig. 1. Vitamin A deficiency (VAD) prevalence (clinical and subclinical) and regions of orange and tangerine production (WHO 2009).

Nutrition (3)



- Propagating good foods
- Top 10 foods highest in vitamin A
 - Horticultural products

	Product	Type
1	Sweet potato	vegetable
2	Carrots	vegetable
3	Leafy vegetables (dark leaf)	vegetable
4	Squash	vegetable
5	Romaine lettuce	vegetable
6	Dried apricots	Fruit
7	Cantaloupe melon	Fruit
8	Sweet peppers	vegetable
9	Tuna (fish)	fish
10	Mango	Fruit



#3: Dark Leafy Greens (Kale, Cooked)

Vitamin A in 100g	Per cup, chopped (130g)
13621IU (272% DV)	17707IU (354% DV)

Other Dark Leafy Greens High in Vitamin A (%DV per cup, cooked): Frozen Spinach (458%), Frozen Collards (391%), Frozen Kale (382%), Frozen Turnip Greens (353%), Spinach (377%), Collards (289%), Dandelion Greens (305%), Beet Greens & Turnip Greens (220%), Swiss Chard (214%), and Pak Choi (144%). [Click to see complete nutrition facts.](#)

#5: Cos or Romaine Lettuce

Vitamin A in 100g	Per cup, shredded (47g)	Per head (626g)
8710IU (174% DV)	4094IU (82% DV)	54525IU (1090% DV)

Other Types of Lettuce High in Vitamin A (%DV per cup, shredded): Green Leaf (53%), Red Leaf (42%), Butterhead (36%), and Chicory (33%).

#8: Sweet Red Peppers

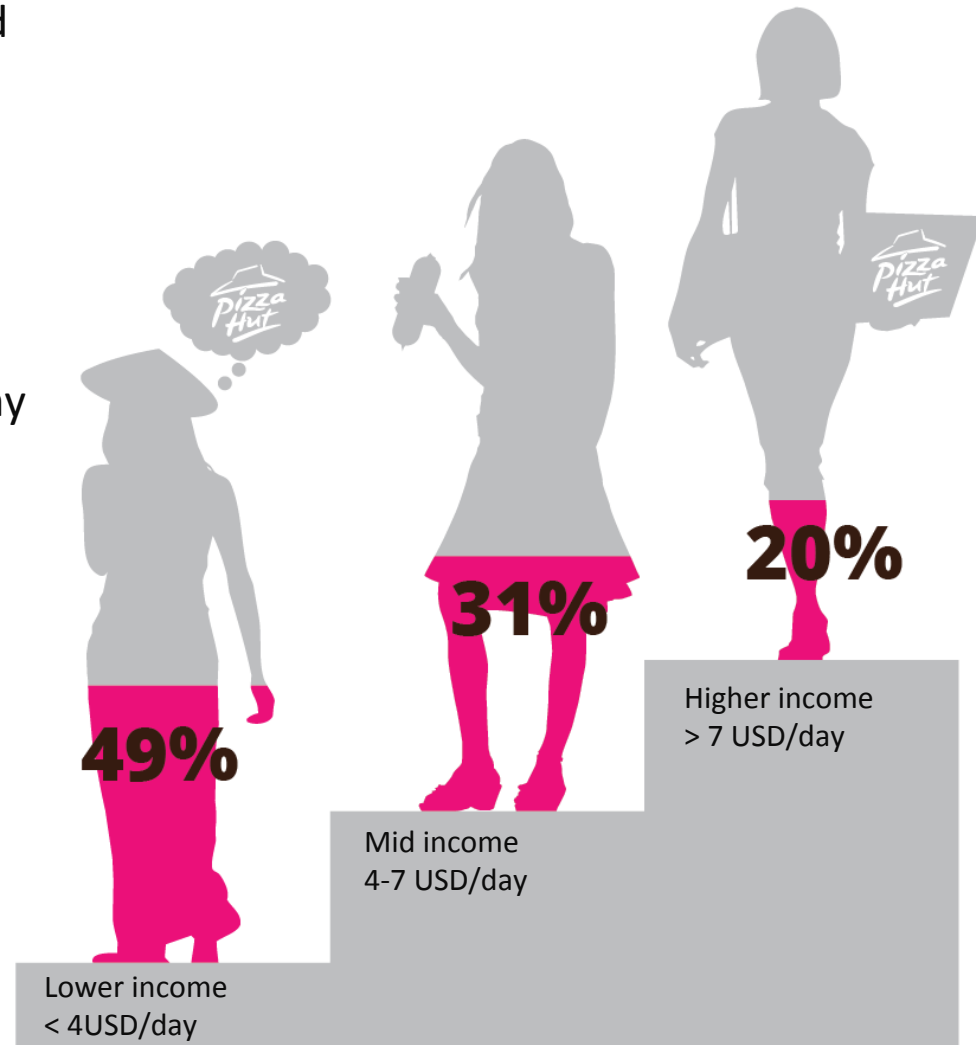
Vitamin A in 100g	1 cup chopped (149g)	1 large pepper (164g)
3131IU (63% DV)	4665IU (93% DV)	5135IU (103% DV)

Other Peppers Providing Vitamin A (%DV per large pepper): Sweet Green Peppers (12%), and Sweet Yellow Peppers (7%). [Click to see complete nutrition facts.](#)

Nutrition (4)



- Dietary issues potentially regard **70%** of Hanoi urban population
 - **49%** (>3mln) living on an income of 4USD/day or less are food vulnerable
 - **20%** higher income classes increasingly adopt unhealthy modern diets



Sources: Fresh Studio Consumer Survey Hanoi 2012, C=1400;

Fresh Studio Report: Reaching lower income groups with safe and healthy foods - mission possible?

United Nations, 2010, Urban Poverty Assessment in Hanoi and Ho Chi Minh City, 2010;

Preparing for the future



- ▶ How to comply with future demands from the domestic and export markets in terms of product quality and safety?
 - ▶ How to increase productivity levels per m² in a **sustainable** way?
 - ▶ How to ensure year round supply of products?
-
- ▶ A **modern** horticulture vegetable production sector could provide an answer to these challenges





Horticulture in Vietnam

Diversity in cultivation zones

Horticultural production area's



Crops of interest



- Temperate vegetables: tomato, sweet pepper, lettuce broccoli
- Flowers (summer)

- Tropical vegetables
- Temperate vegetables
- Rice
- Potato
- Corn
- Flowers (winter)

- Temperate vegetables: sweet pepper, tomato and lettuce
- Potato
- Flowers

- Tropical vegetables
- Rice
- Fruit: citrus and dragon fruit

Vegetable demand urban North-Vietnam



- Hanoi daily consumption ~2,000 tons of fresh vegetables
 - Top 8 vegetables bought are:

	Product	Type of vegetable
1	Cabbage	Temperate vegetable
2	Morning glory	Tropical vegetable
3	Choy sum	Tropical vegetable
4	Potato	Temperate vegetable
5	Tomato	Temperate vegetable
6	Carrot	Temperate vegetable
7	Mustard	Tropical vegetable
8	Kohlrabi	Temperate vegetable



Lam Dong - Dalat

Garden for urban Asia



Horticulture center of Vietnam and wider Southeast Asia



City	Population
Malaysia	30 mln
Thailand	66 mln
Singapore	5 mln
Hong Kong	7 mln
Philippines	99 mln
Taiwan	23 mln
Vietnam	90 mln

Dalat background



- **Unique production area in Southeast Asia**

- 30,000 ha of vegetable production
- 1,000 – 1,600 meters above sea-level
- Temperate climate
- Year round production possible

- 280 kilometers from Ho Chi Minh City

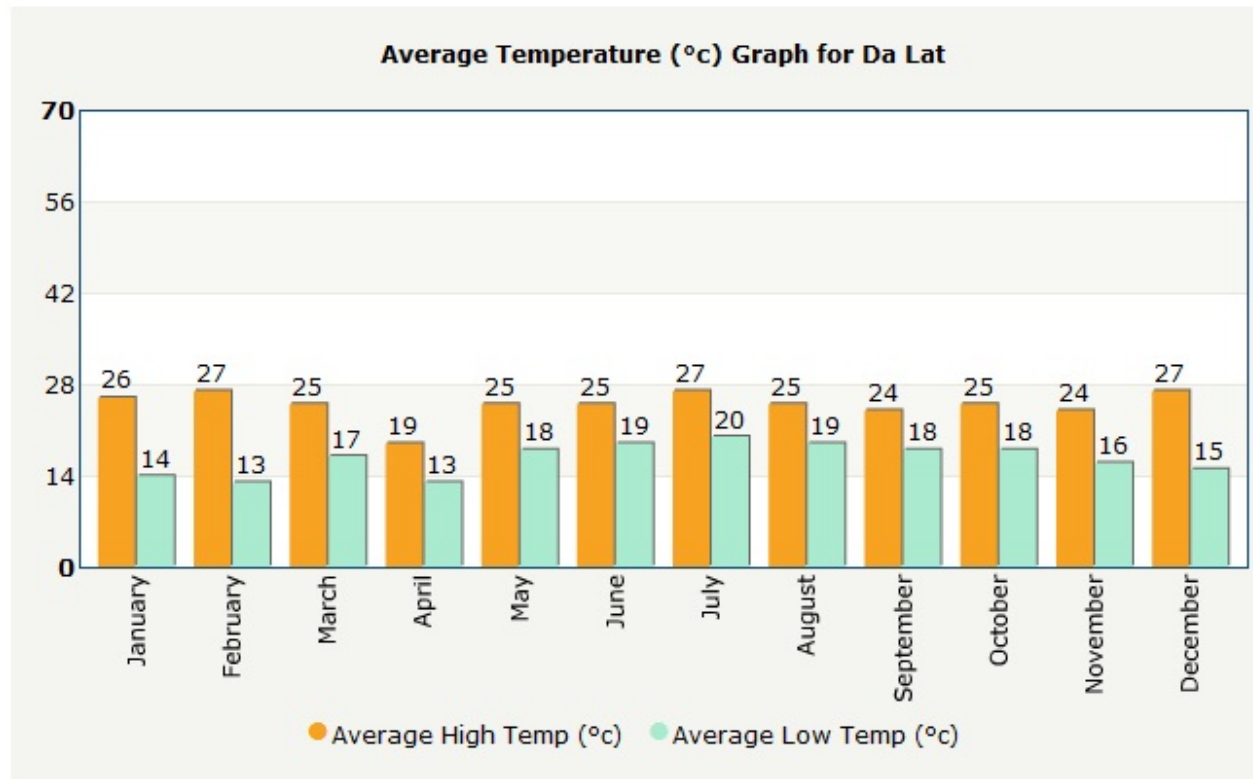
- New airport: from July 2014 direct first international flights will start



Climate data: temperature



Average High/Low Temperature for Da Lat, Vietnam



Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
26°C	27°C	25°C	19°C	25°C	25°C	27°C	25°C	24°C	25°C	24°C	27°C
14°C	13°C	17°C	13°C	18°C	19°C	20°C	19°C	18°C	18°C	16°C	15°C

Example: lettuce



- A wide range of lettuces are grown year round in Dalat: >3,000 ha

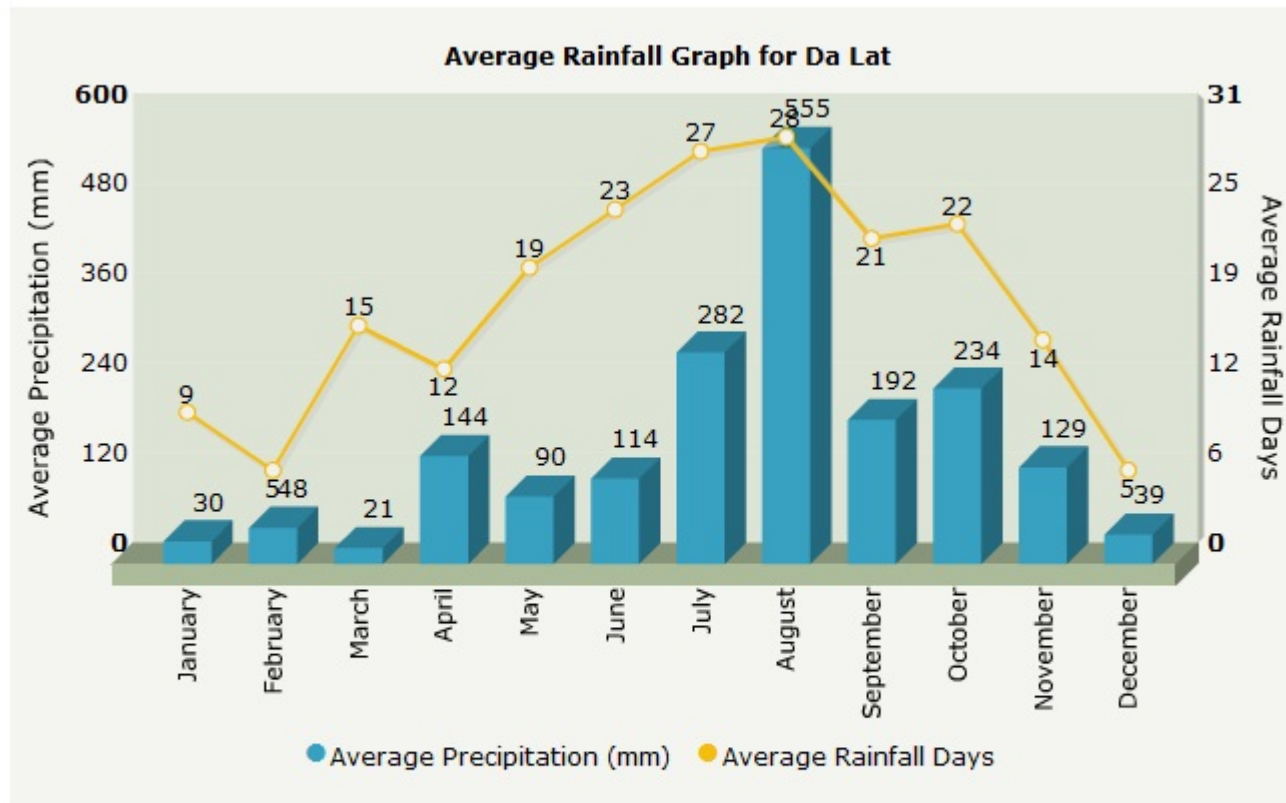


■ BUT

Climate data: rainfall



Average Rainfall for Da Lat, Vietnam



Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
30mm	48mm	21mm	144mm	90mm	114mm	282mm	555mm	192mm	234mm	129mm	39mm
9	5	15	12	19	23	27	28	21	22	14	5

Rainy season: production risk



Many challenges on farmer side



“How can I get a stable income from growing safe vegetables?”

“How can I control pests and diseases and apply less pesticides?”

“How can I get direct contact with the market?”





Green house innovation

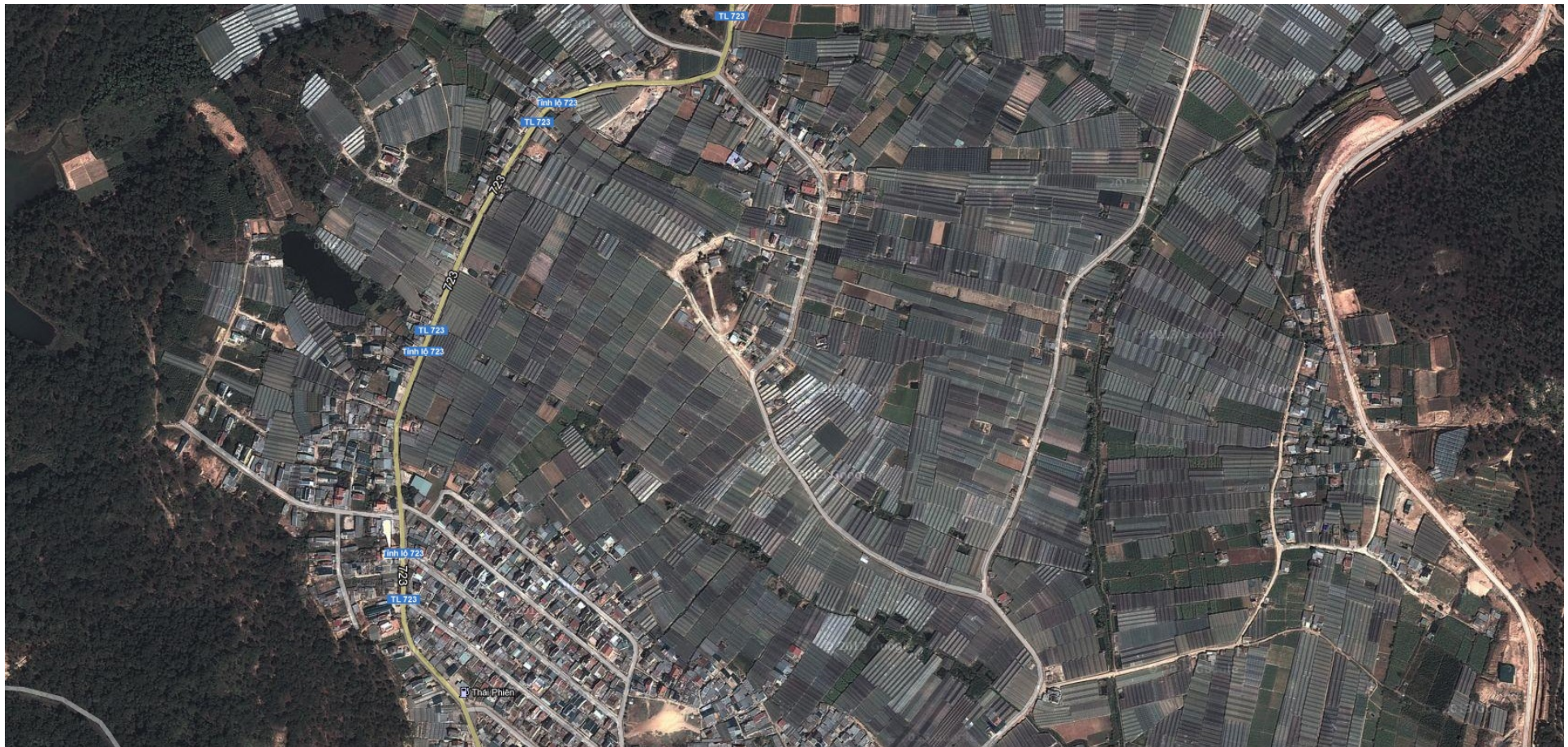
Year round quality and volume



Green houses Lam Dong - Dalat



- $\pm 2,500 - 3,500$ hectares of greenhouse production:
 - Mainly located around Dalat
 - Mainly used for flower production



Low level of technology



- Beautiful picture, but how efficient?
 - Water use
 - Labour



- Mainly production in the soil
 - Soil disease problems

Farmers are willing to change



- First local sweet pepper production on substrate established
 - Better quality varieties for red and yellow sweet pepper introduced
 - Limited export to Singapore taking place, due to better quality fruits
- But still a very small scale at the moment

Well developed plant nursery sector



- Basically all vegetables are planted as a seedling
 - Even spinach is planted as seedling and all tomato plants are grafted



Requirements for future growth



- Access to professional greenhouse **technologies** suitable for the local conditions
 - Greenhouses
 - Climate/irrigation control
 - Inputs (fertilizer, seeds, substrate, biological pest control, etc.)
- Access to **knowledge** and training
 - How to manage greenhouse production?
 - Train the farmers of the future?
 - Train the farm managers of the future?
 - Train the input supply technical staff?
- Access to **finance**
 - Loans for investments in greenhouse production



Solving these challenges creates opportunities for the Dutch horticulture sector

Public Private Partnerships





Examples of bilateral cooperation



Fresh Studio R&D Farm



- 1.1 hectare R&D Farm focusing on vegetables
 - 2 greenhouses with production in substrate
 - 1 nethouse
 - 6 fields for outdoor production
- Develop and test new production methods and varieties
- Demonstrate results to farmers and other clients



VN Facility: Adding value to the chain



- Project donor:



Rijksdienst voor Ondernemend
Nederland

- Project partners:



APPLIED PLANT RESEARCH
WAGENINGEN UR



TRƯỜNG ĐẠI HỌC ĐÀ LẠT
University of Da Lat



University of Applied Sciences



VAN HALL
LARENSTEIN
PART OF WAGENINGEN UR

- Find tailored practical solutions for a number of serious problems that are being faced by the market oriented vegetable sector of the Da Lat region in Vietnam
- Increase the knowledge and management



Innovations: bell pepper production



Top quality sweet
pepper



Innovations: tomato production



Creating a tomato value chain



Transition Facility project: Horti Dalat



- Project donor:  NL Agency
Ministry of Economic Affairs, Agriculture and Innovation
- Project partners:



- Accelerating the development of modern greenhouse vegetable production sector in Da Lat City, Lam Dong Province, Vietnam
- Capacity building of farmers, students and others working within the horticulture sector
- Providing the means in knowledge and financial support for farmers to invest in modern greenhouse technologies

Project started in 2014

Transition Facility project: Horti Dalat



- **Develop the modern greenhouse vegetable production in Vietnam**

- Modern greenhouses build at 6 selected pilot farmers

- Seeing is believing



- Capacity building

- Confidence to invest



- Access for finance

- Means to invest



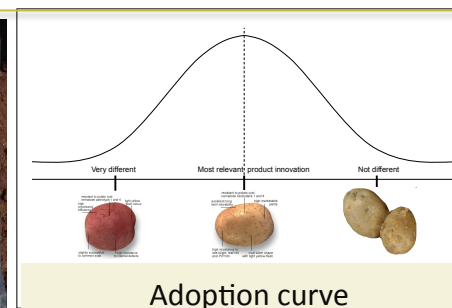
➤ PESP



WEF



■ NAKAgro



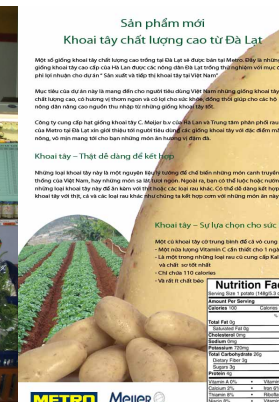
Consumer testing



Expert opinions of chef-cooks



Table potato sales trials (modern & traditional outlets)



PSOM Vegetable sourcing METRO C&C Vietnam



Nursery



Harvest



Delivery



Daily

365 days/year

>125 F&V items

> 35 tons/day



Food safety

Quality requirements

Assortment

Availability

Best Price

METRO Da Lat platform

QA check

Pre-cooling

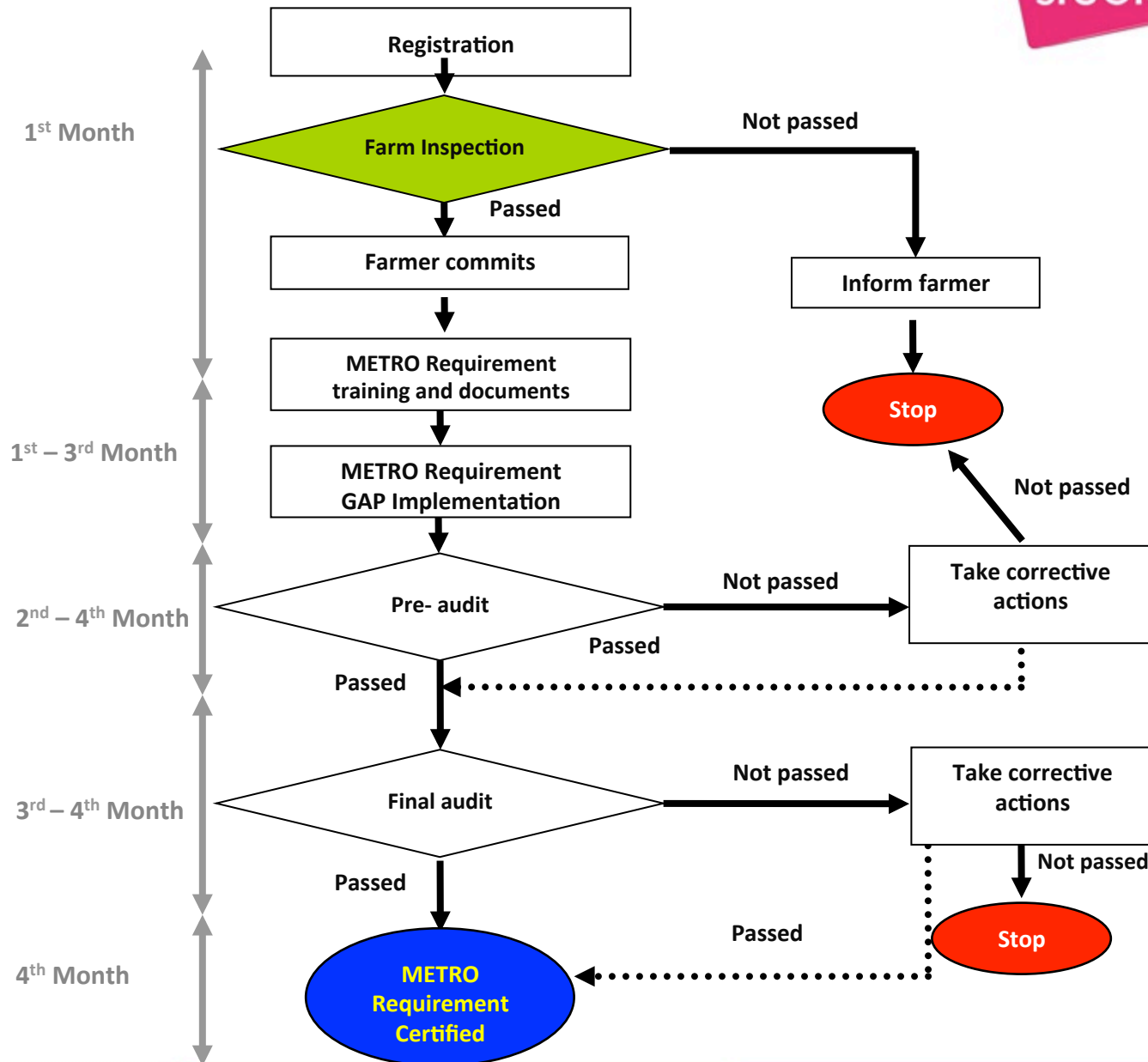
Packaging

Allocation

METRO Vietnam (21 stores)



METRO Requirement – G.A.P.



Vegetable sourcing METRO C&C Vietnam



Chất lượng tốt nhất từ nông trại tới bàn ăn

Bạn có biết rằng...
METRO chỉ nhập các giống rau sạch nhất, theo đúng phân vùng quy hoạch của Bộ Nông nghiệp và Phát triển Nông thôn.



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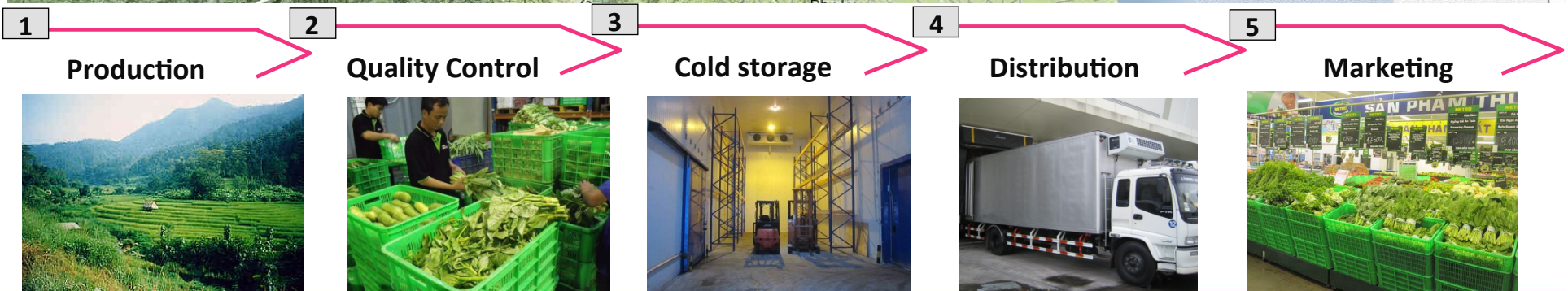
Nghĩ tới sản phẩm tươi, nghĩ tới ...

METRO

Expansion to North Vietnam



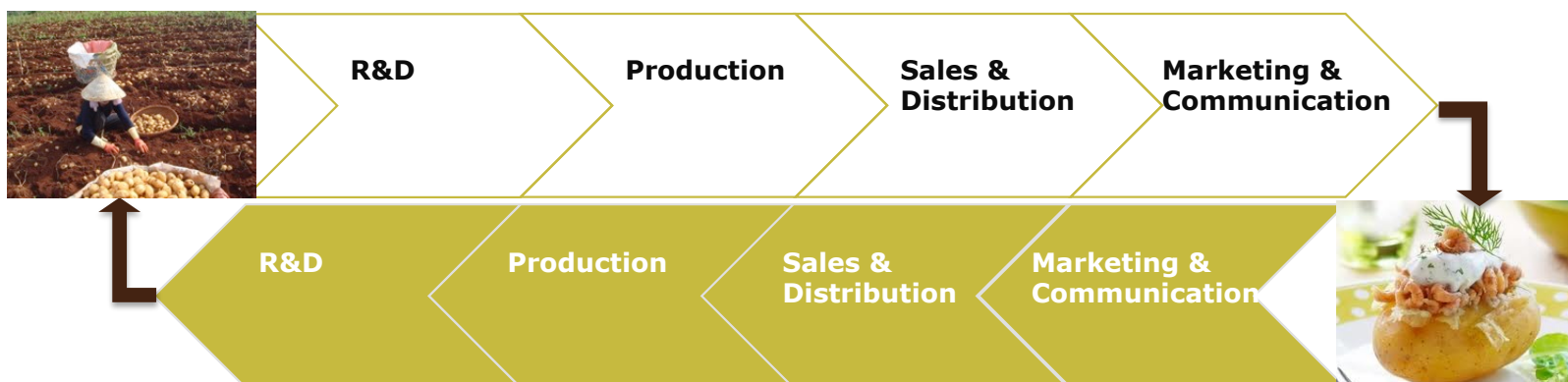
- Working in 3 sourcing areas with 6 farmer groups representing 110 farmers



FDOV 'Growing out of poverty with potato'



- Food security and pro-poor development potato – a value chain approach



- Consortium



Growing out of poverty with potato



Vietnam to benefit from the Dutch expertise in potato:

- By:
 - Introducing new high quality cultivars
 - Training and extension program
 - Market linkage
- To:
 - Increasing food security in Vietnam
 - Promoting sustainable potato production production
 - Increasing farmer incomes
 - Creating new job opportunities
 - Establishing a strong potato sector
 - Improving livelihoods:
 - Women empowerment
 - Mechanization
 - Nutrition



Other value chains we are co-creating



- ▶ Developing professional family owned dairy farms
- ▶ Creation of a safe pork value chain
- ▶ Powering Aquaculture Progress; developing a R&D Aquaculture farm



Rijksdienst voor Ondernemend
Nederland



Kingdom of the Netherlands



Thought starters for future development

For Safety, Health and Wealth



Areas for further development



- Sustainable **gherkin production in the Red River Delta**: sourcing and QA for processing for export
- Sustainable **tropical vegetable cultivation** in Red River and Mekong deltas: applied research and extension
- **NFT lettuce** in Dalat and Red River Delta
- **Rice cultivation** in the Red River and Mekong Deltas: seed coating
- **Temperate vegetable cultivation in Moc Chau** – creating a 2nd Dalat (sweet pepper, tomato, lettuce and broccoli)
- **Bulb flowers in pots** for urban markets; Red River Delta
- Creation of **Fresh Academy**: short courses for training staff of companies operating in Vietnam (production and input suppliers)
- >>>

Thank you



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