



Worriless enjoyment

Producing safe vegetables



Content



- Tomorrow's market vegetable demand
- Vegetable production for tomorrow's market – farmer perspective
- Creating vegetable value chains
- Honouring the pioneers





Producing for the future

Tomorrow's market vegetable demand

Vegetable demand urban North-Vietnam



- Huge appetite for vegetables
 - Hanoi with 6.5 million inhabitants buys daily around 2,600 tons of fresh vegetables!!!
- Top 8 vegetables bought are

Product	Type of vegetable
Cabbage	Temperate vegetable
Morning glory	Tropical vegetable
Choy sum	Tropical vegetable
Potato	Temperate vegetable
Tomato	Temperate vegetable
Carrot	Temperate vegetable
Mustard	Tropical vegetable
Kohlrabi	Temperate vegetable

Vegetable demand urban North-Vietnam



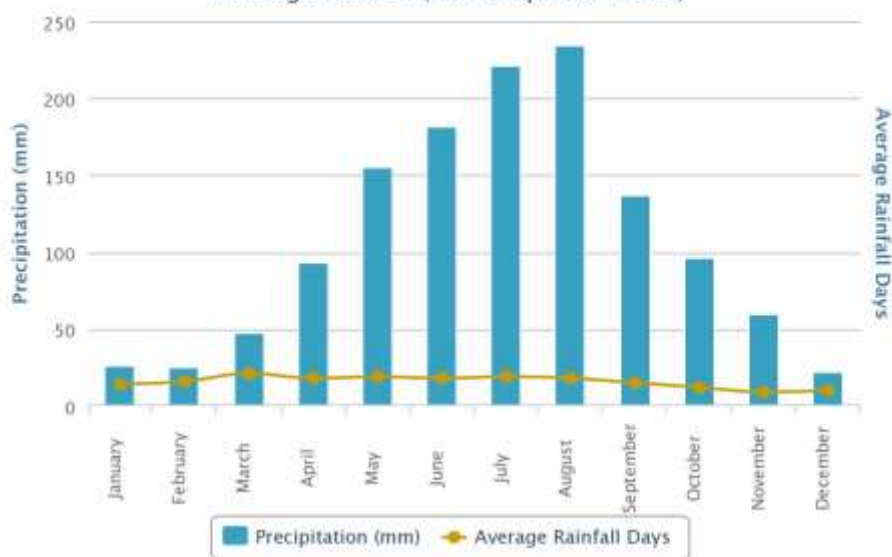
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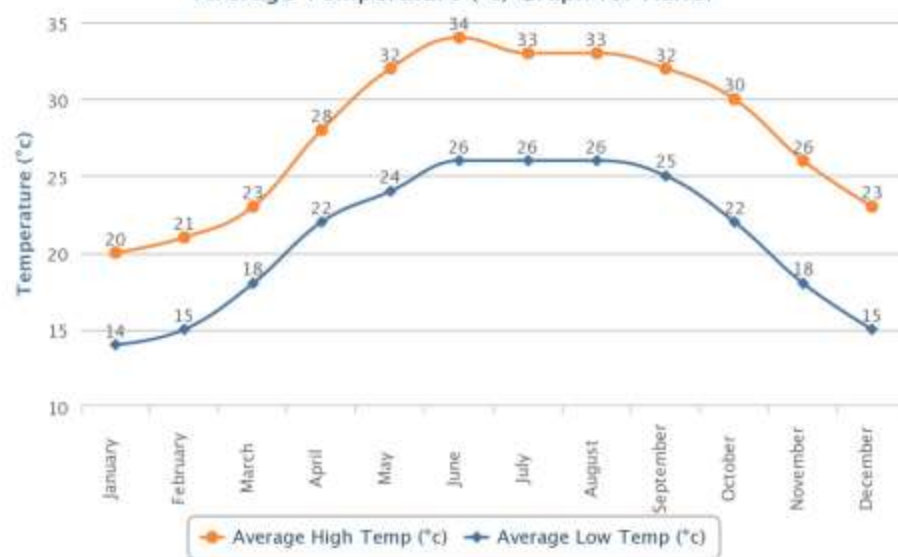
Seasonality due to rainfall & temperature



Average Rainfall (mm Graph for Hanoi)¹



Average Temperature (°C) Graph for Hanoi¹

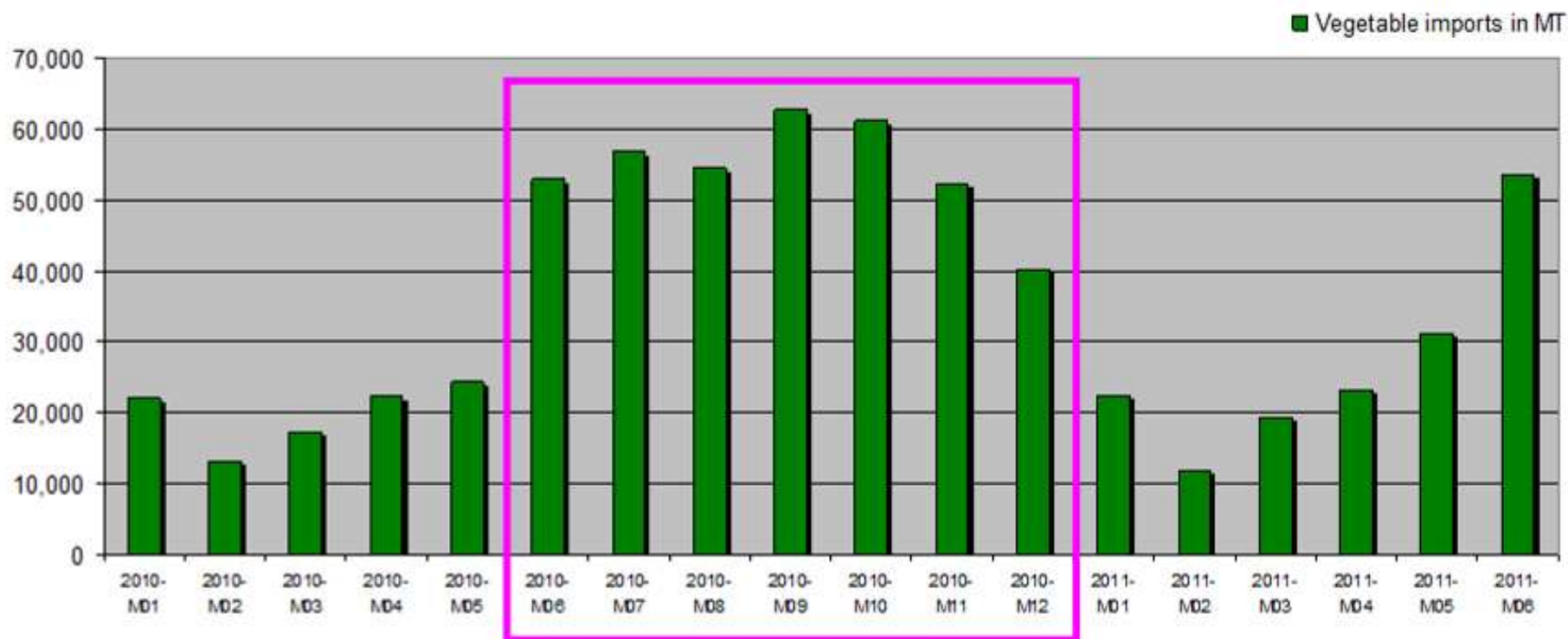


- High rainfall and temperature limits temperate vegetable production possibilities from April – August in the Red River Delta
- Resulting in imports from other locations like China and Da Lat

Challenge to meet the demand



- Imports from China increasing during off-season



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

Challenge to meet the demand



■ In terms of food safety

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.

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.

Tuesday, Jul 16, 2013, Posted at: 17:10(GMT+7)

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.

Dubious food quality in Vietnam: who is to blame?

Last updated: Friday, March 01, 2013 11:30

Chinese grapes, potatoes sold in Vietnam heavily contaminated

Last updated: Wednesday, August 15, 2012 15:50



Excessive amounts of fungicides and insecticides have been found in Chinese grapes and potatoes that have been sold widely with USA labels on them, an official said Tuesday.

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).



Timeline projects leading to conference



2011

Project:

- Creation of a value chain for vegetables in North Vietnam

Partners:

- METRO C&C Vietnam
- Dutch Embassy
- Applied Plant Research - WUR

2012

Project:

- Creation of a value chain for vegetables in North Vietnam
- Counter seasonal vegetable production

Partners:

- METRO C&C Vietnam
- Dutch Embassy
- Applied Plant Research - WUR
- ACIAR
- Applied Horticulture Research
- NOMAFSI
- HUA
- FAVRI
- CASRAD
- CIRAD

2013

Project:

- Creation of a value chain for vegetables in North Vietnam
- Counter seasonal vegetable production
- Connecting farmers to markets

Partners:

- METRO C&C Vietnam
- Dutch Embassy
- Applied Plant Research - WUR
- ACIAR
- Applied Horticulture Research
- NOMAFSI
- HUA
- FAVRI
- CASRAD
- CIRAD
- FIVI MART
- BoP Innovation Center
- The Fruit Republic
- Ocean Mart
- Hi-way
- Safe vegetable shops



Farmers perspective

Vegetable production for tomorrow's market

Many challenges on farmer side



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

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

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

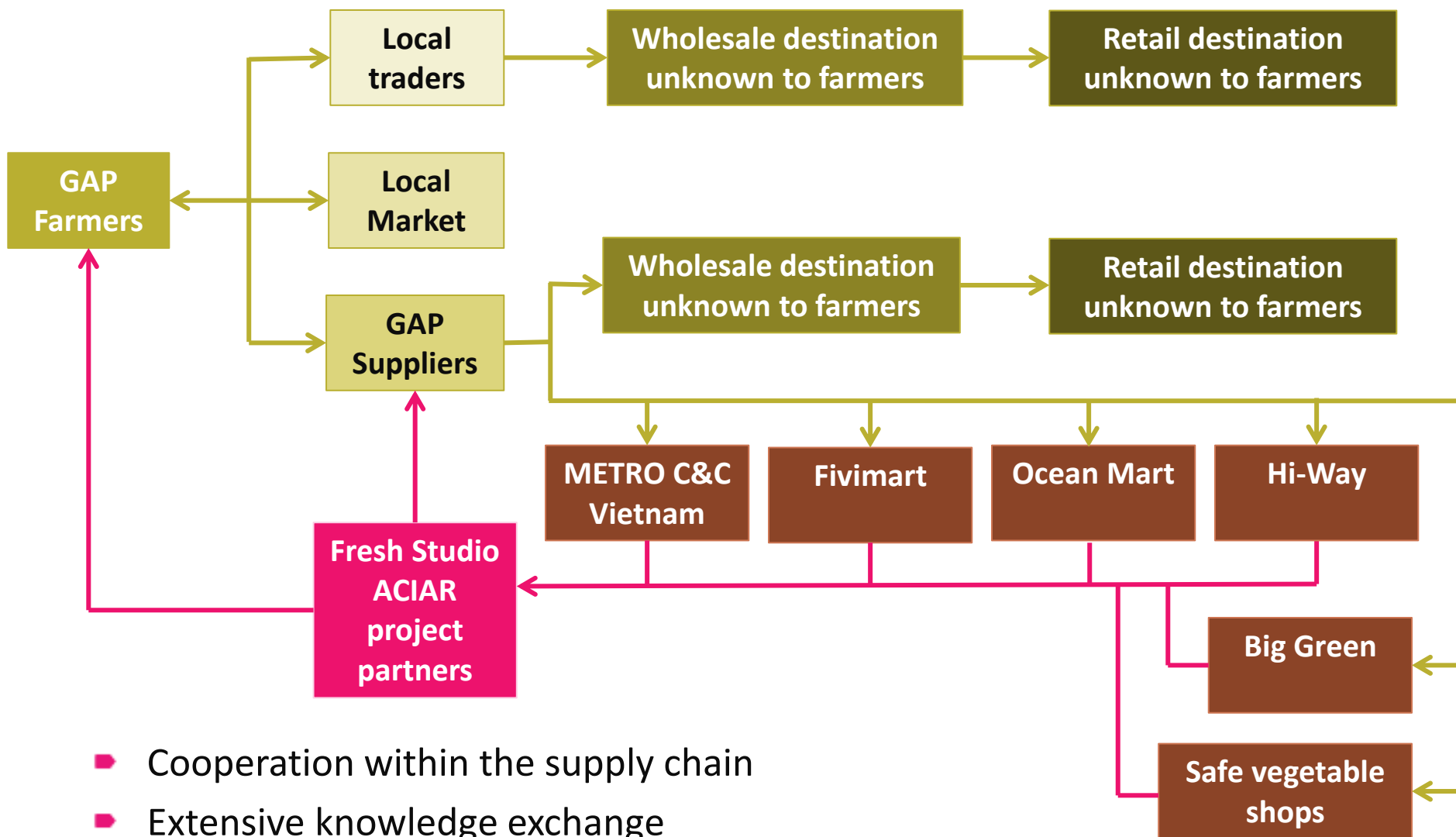


Supply chain before interventions



- Limited cooperation within the supply chain
- Limited knowledge exchange

Supply chain after interventions





Creating vegetable value chains

Vegetable production for tomorrow's markets



Local knowledge development



- Theory in classroom setting and application of theory in the field during practical exercises and homework assignments

No	Modules
1	• 1 Course overview • 2a From seeds to plant • 3a Principles of fertilization • 3b Soil tillage
2	• 4a Pest / disease identification • 4b Nematology • 5a Crop protection management
3	• 5b Crop planning and rotation • 3b Principles of fertilization • 5c Crop protection
4	• 3c Principles of fertilization • 5d Crop protection • 6 Trial design

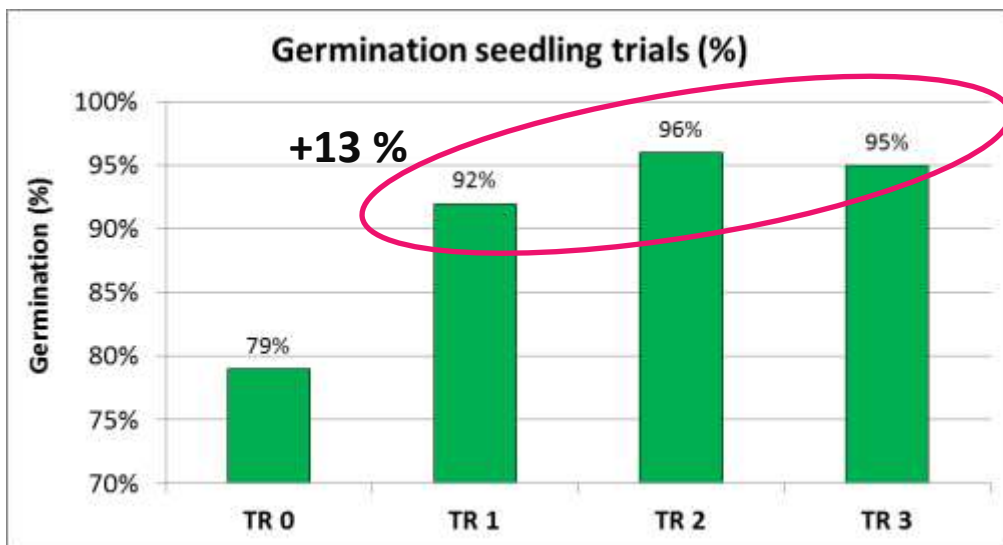


Nursery and substrate trials



- Evaluate the effects of using different substrate in making seedlings in nursery
- Minimize the total amount of coco peat to save cost

Code	Treatment	Ratio of materials (in %)
TR 0	Treatment 0	Local seedling production
TR 1	Treatment 1	100% cocopeat
TR 2	Treatment 2	75% cocopeat: 25% soil
TR 3	Treatment 3	50% cocopeat : 50% soil



Supply chain development



- Introduction of plastic crates to transport products
- Traceability system through out the supply chain
- Cold chain management
- IT solution

Before



After



METRO Requirement (GAP) system



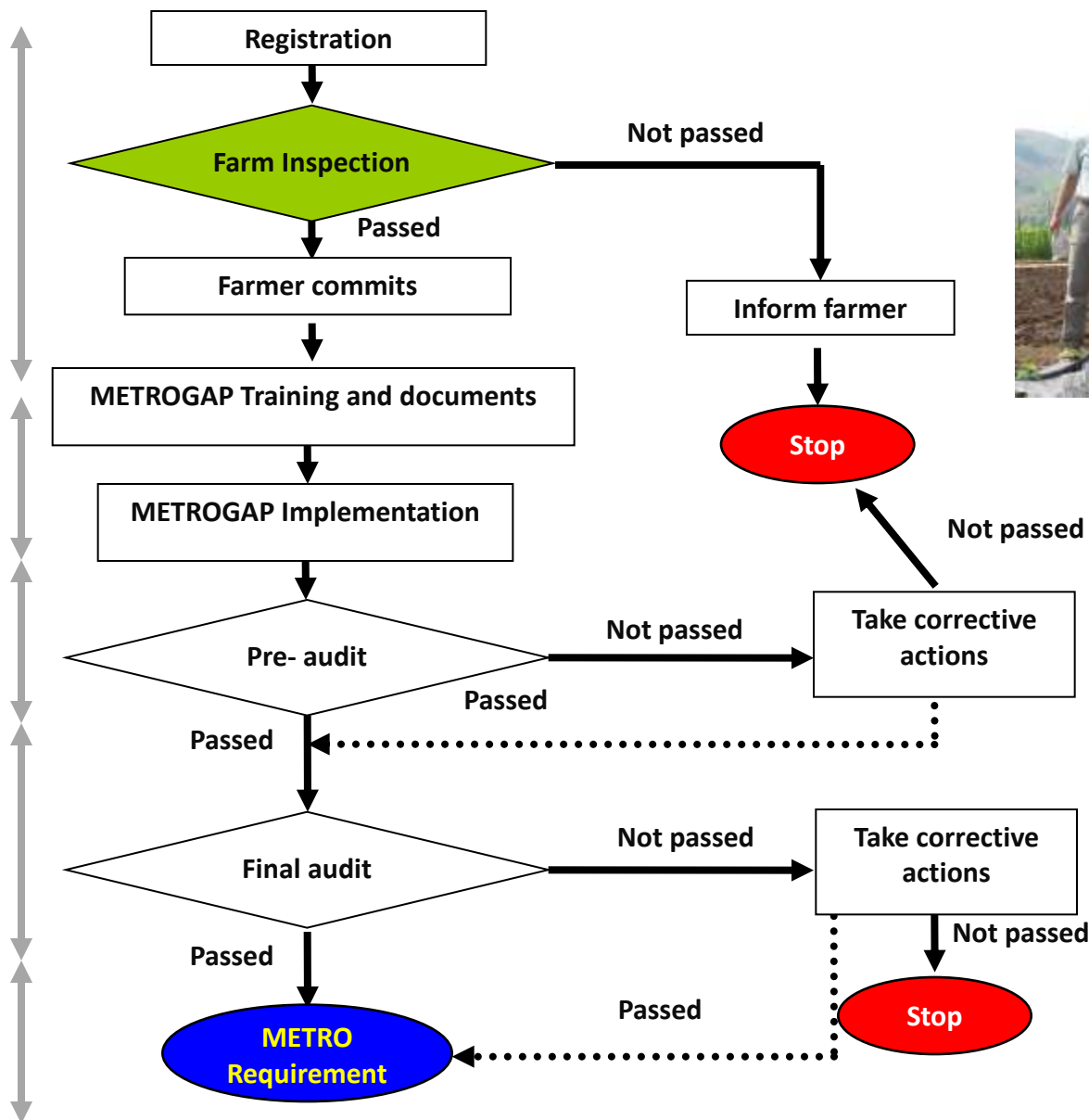
Indicative
schedule
1st Month

1st – 3rd Month

2nd – 4th Month

3rd – 4th Month

4th Month



GAP training, auditing and certification



- GAP implementation ensures food safety at producer level
- Continuous monitoring of GAP standard of qualified agronomist & QA staff is required

Farmer record keeping and monitoring



- MONQI program is used to key in all farmer activities per produced crop
 - Providing feedback to farmers on their crop performance
 - Make record keeping exciting
 - Measuring impact over time



Báo cáo trạng trại

1 Thông tin chung

Họ và tên	Tên trại
LU	LUK: Bàng phồng - Dơi set cét
Diện tích	Diện tích: 270 m ²
Số cây	Số cây: 30/7/2012
Ngày	Ngày thu hoạch đầu tiên: 9/24/2012 (28 ngày)
Ngày xuất	Ngày thu hoạch cuối cùng: 10/9/2012 (53 ngày)
	-9.986.000 kg/ha
	2.57 kg/m ²

ID = 3.981

2 Tài chính

Bảng 1: Tổng tài sản dự kiến và lãi ròng

Chi phí ban đầu	199.200 VND
Thu nhập	2.348.000 VND
Số dư tài sản	2.179.800 VND
Số dư tài sản	80.733.333 VND/ha
Ghi chú:	211 VND/kg

Ghi chú: 1 ha = 10.000 m²

Bảng 2: Chi phí đầu vào, chi phí của chi phí (trong bảng 1)

Loại	Số lượng	Đơn vị	Đơn giá	Chi phí ban đầu	
Hạt giống					
Cà phê	300.00	gr	130	39.000	
				39.000	23%
Thuốc BBT					
Khóa SWS	4.00	gr	875	3.500	
				3.500	2%
Phân bón					
Đạm Dúi Trâu	9.05	kg	14.000	126.700	
				126.700	79%
Lao động					
Lao động hợp tác, vận chuyển					
				0	0%
Khác					
				0	0%
Tổng				199.200	100%

Ghi chú: Báo cáo dự kiến tài sản và lãi ròng

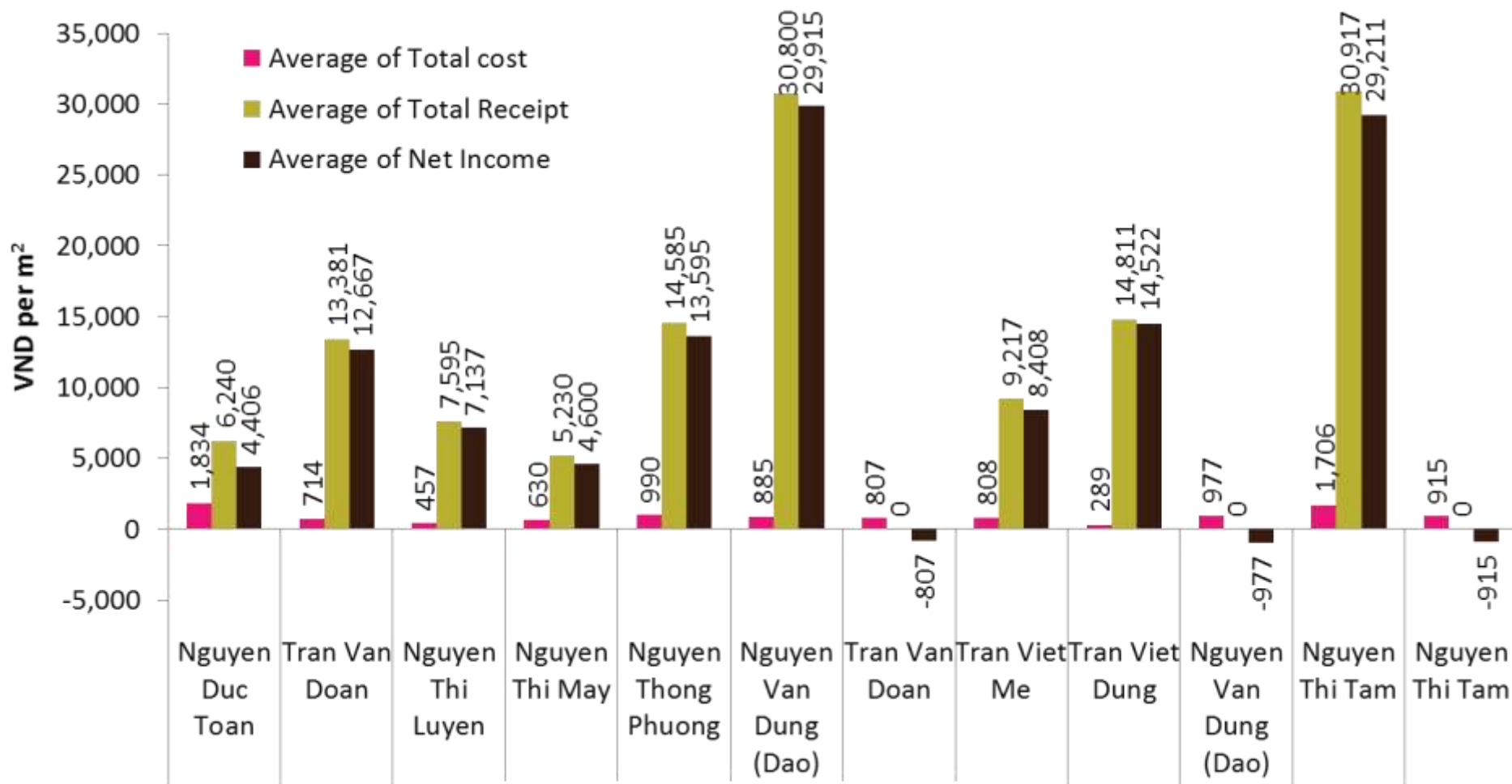
Bảng 3: Điều lệ

Loại	Số lượng	Đơn vị	Người mua	Đơn giá	Tổng thu được
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Farmer benchmarking



- White cabbage: group performance in 2013



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



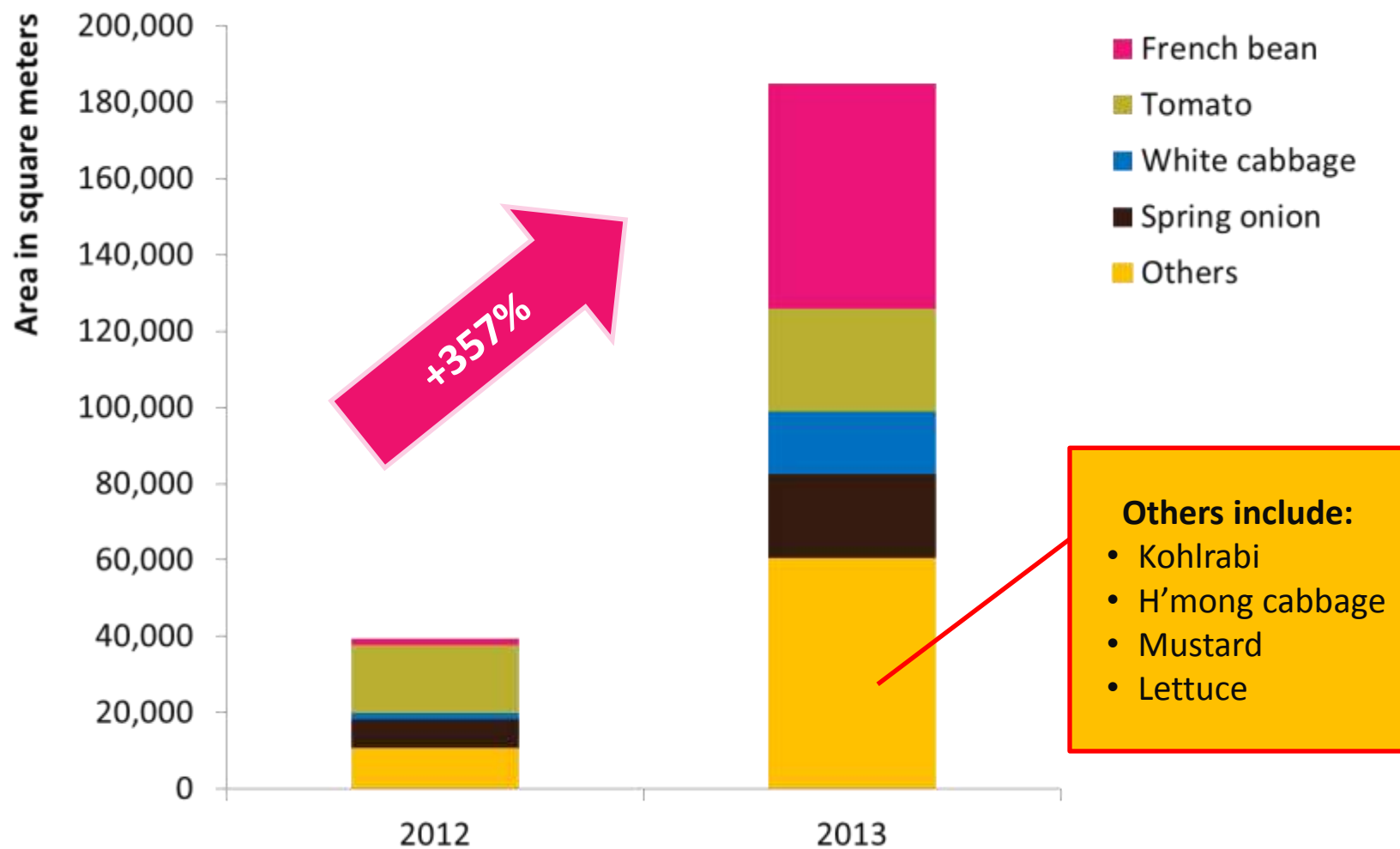
Producing a large assortment of vegetables



- | | | |
|---------------------------|-------------------------|--------------------------------|
| 1. <u>Amaranth</u> | 11. Eggplant | 21. <u>Pakchoy</u> |
| 2. Bitter Gourd | 12. French Bean | 22. <u>Potato</u> |
| 3. Bottle Gourd | 13. <u>Head Cabbage</u> | 23. Radish |
| 4. <u>Broccoli</u> | 14. <u>Kang Kong</u> | 24. <u>Sauropus (Rau ngot)</u> |
| 5. <u>Carrot</u> | 15. <u>Kohlrabi</u> | 25. <u>Spinach</u> |
| 6. <u>Cauliflower</u> | 16. <u>Lettuce</u> | 26. Squash |
| 7. <u>Chinese Cabbage</u> | 17. Luffa | 27. Sweet corn |
| 8. <u>Chinese Kale</u> | 18. Malabar Nightshade | 28. <u>Sweet Potato Leaf</u> |
| 9. <u>Choyson</u> | 19. <u>Mustard</u> | 29. <u>Tomato</u> |
| 10. Cucumber | 20. <u>Onion</u> | 30. Yard Long Bean |

All highlighted vegetables are Metro Requirement certified and available depending on the season

Planted area under GAP program



Summary



To develop a successful vegetable value chain:

- A holistic approach is required involving all parties throughout the supply chain



With dedicated people and businesses, like present today, these first steps will lead to more safe and good quality vegetables available on the market produced in Vietnam!

Honouring the pioneers



Questions

Your challenges

Ideas

Next steps

Contact information:

René van Rensen

Tel. +84 (0)6 3533 137

Rene.van.rensen@freshstudio.vn

www.freshstudio.vn