



Nutrition vulnerability past or future?

A fresh perspective



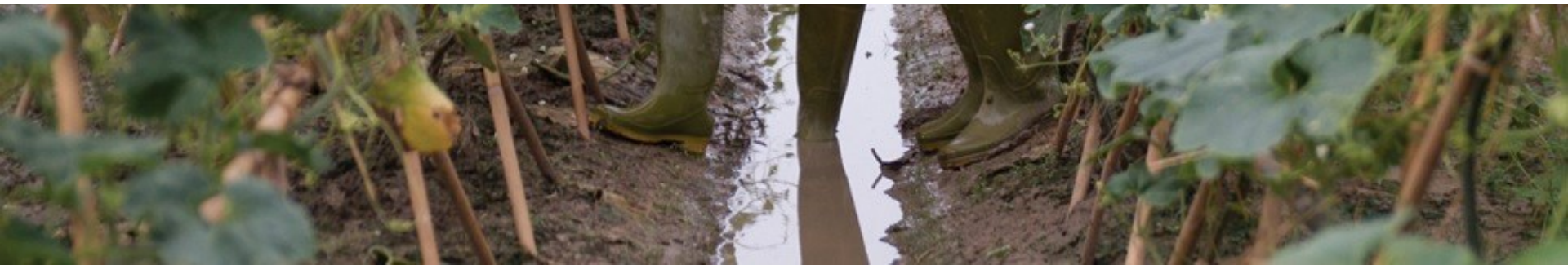
Sigrid Wertheim-Heck, 01/12/2014

ACIAR workshop on nutrition sensitive agriculture – Looking through a nutrition lens



Fresh Studio

'Growing better lives'





2006



2007



2008



2009



2010



2011



2012



2013



2014

Fresh Studio founded in Vietnam. The first office is opened in Hanoi.

Fresh Studio opens its second Vietnam office in Dalat.

Opening of Fresh Studios' own R&D farm in Dalat, which is the most important vegetable area of Vietnam.

Fresh Studio is co-organizer of the successful Fresh Produce Vietnam.

The third office of Fresh Studio is opened in HCMC, Vietnam. A rep. office is opened in Manila (Philippines).

Fresh Studio starts with managing a HACCP certified state-of-the-art fresh produce packhouse.

The fourth Fresh Studio office in Can Tho is a fact.

Fresh Studio expands into fish in the Mekong Delta and starts North Vietnam vegetable sourcing system from Moc Chau, Dong Anh and Hai Duong.

Fresh Studio supports its client to setup and manage the first fresh fish processing facility for the domestic market, in Can Tho.

Number of staff working for Fresh Studio surpasses 100 persons.

Fresh Studio enlarges its portfolio with dairy development in Vietnam and set's up fresh produce distribution center close to Hanoi.

Kick-off of Fresh Studios' new logo and website. Visit: www.freshstudio.vn

Fresh Studio signs with world leaders in seed potato and potato processing a 5 year potato development program in Vietnam.

The Fresh Studio team is developing a second R&D farm for one of its clients: dedicated to fresh water aquaculture and located in the Mekong Delta.





- **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

Value chain approach



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



Expertise and services



360° value chain
approach



■ 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





Preparing for the future

Fresh Studio research on wholesome food consumption



Fresh Studio mission



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

”



Fresh Studio diet research



- Topics include:
 - Daily (fresh produce) diet
 - Budget spending on food and nutrition
 - Access to healthy food for low income urbanites
 - Knowledge about and interest in nutrition
 - Openness to innovative food products
 - Strategies for information gathering
 - Food health and safety risk coping strategies
- Methods include:
 - Observations (participant and non-participant)
 - Intercept interviews
 - In-depth interviews (consumers and experts)
 - Survey (household and shopper)
 - Focus groups
 - Household visits
 - Shopping trips
 - Journal research with budget books
 - NEW 2015: household panel
 - NEW 2015: taste lab



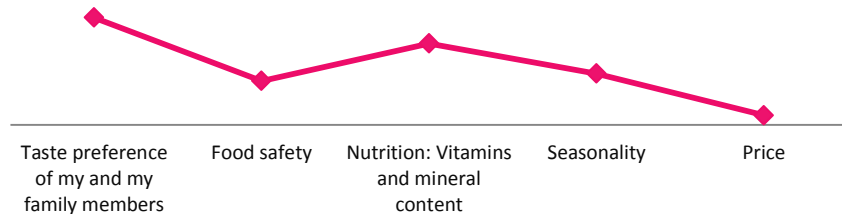
Survey method validation research



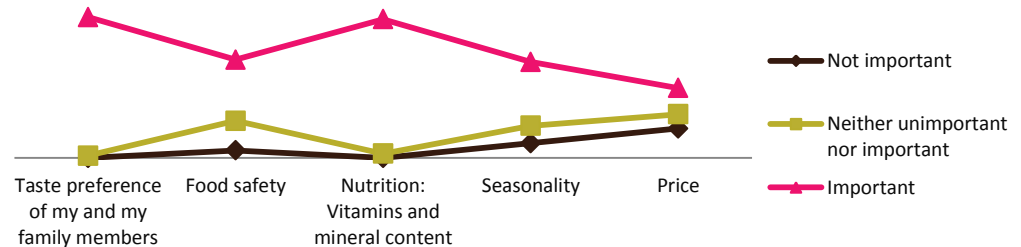
Questionnaire triangulation

■ EXAMPLE: *What is most important to you when you decide what vegetables to buy?*

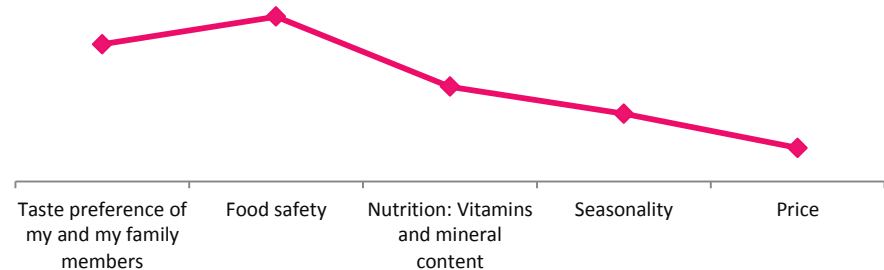
■ Forced choice



■ Liker scale



■ Constant sum





Daily diet challenge

Two main dietary concerns



Food vulnerability: past or future

- Country in the process of providing the food necessary for health and growth
- Malnutrition = lack of proper nutrition, caused by:
 - not having enough to eat
 - not eating enough of the right things

1975-1990

Food scarcity

'Food, food, food,... !'



1990-2005

Quantity

'Rice feeds the population'



2005-2015

Quality

'Food safety'



2015 ->

Ingredients ?

Nutrition



Nutrition (1)

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

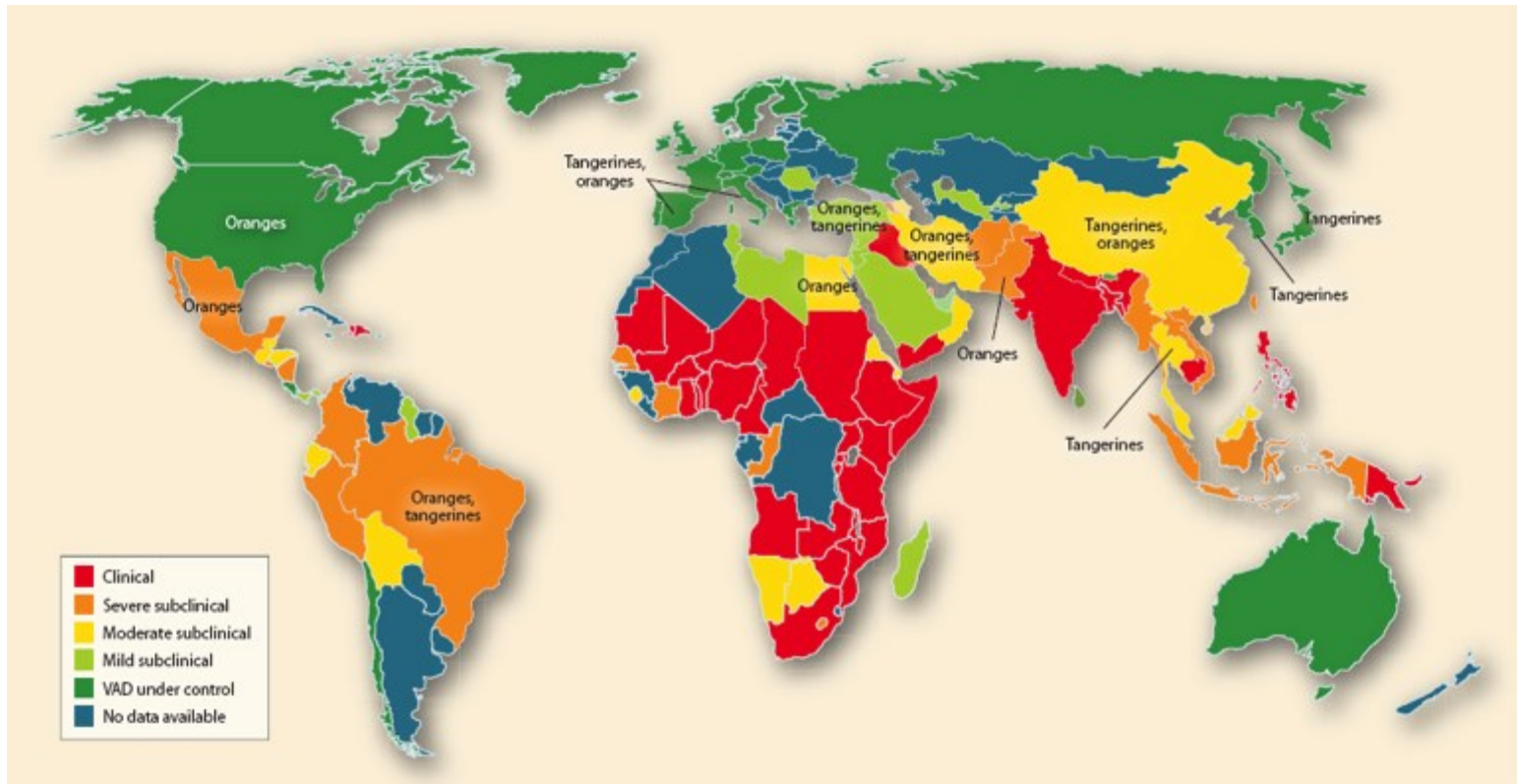


Fig. 1. Vitamin A deficiency (VAD) prevalence (clinical and subclinical) and regions of orange and tangerine production (WHO 2009).

Nutrition (2)



- Propagating good foods
- Top 10 foods highest in vitamin A
 - Vegetables and fruits

| | 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 (148g) | 1 large pepper (164g) |
|-------------------|----------------------|-----------------------|
| 3131IU (63% DV) | 4665IU (93% DV) | 5136IU (103% DV) |

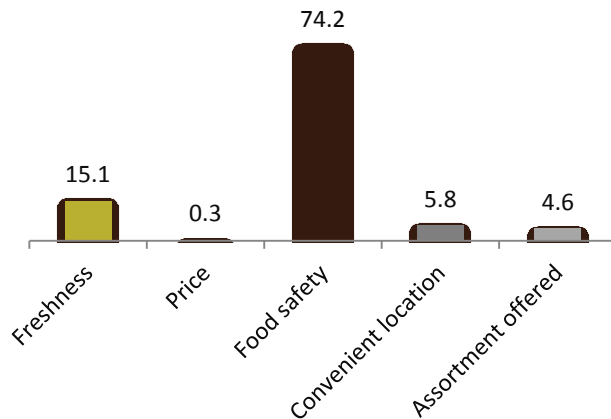
Other Peppers Providing Vitamin A (%DV per large pepper): Sweet Green Peppers (12%), and Sweet Yellow Peppers (7%). [Click to see complete nutrition facts.](#)

Food safety (1)

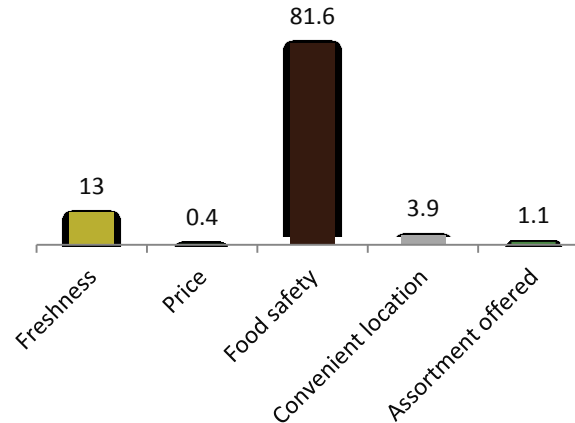


- 94% of consumers is concerned about food safety of vegetables
- Food safety is more important than freshness:

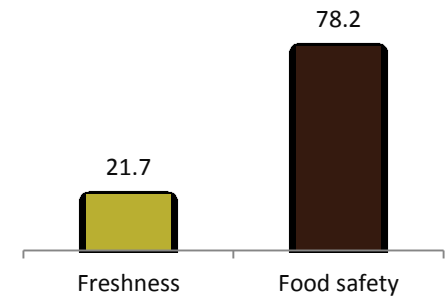
What is most important to you when shopping for vegetables (% respondents)



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



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

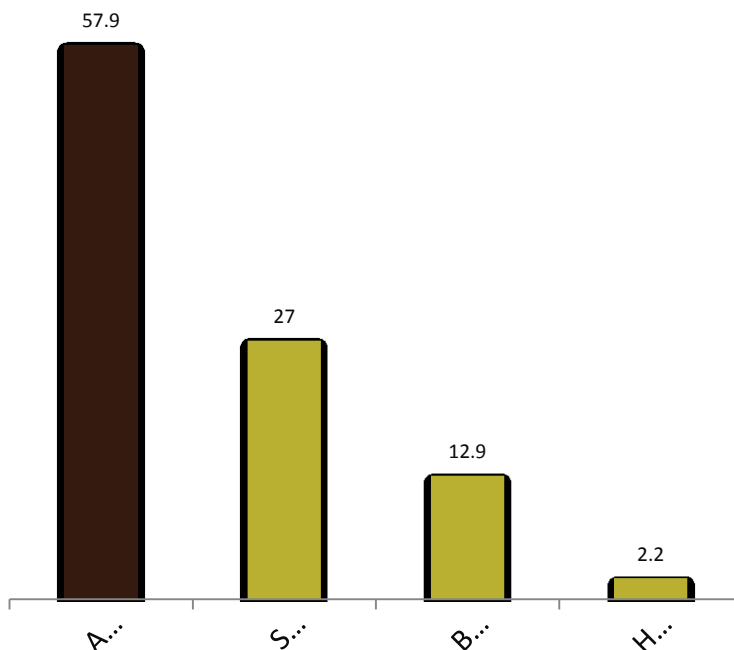


Food safety (2)



- Agro-chemicals are perceived the biggest food safety risk

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



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.

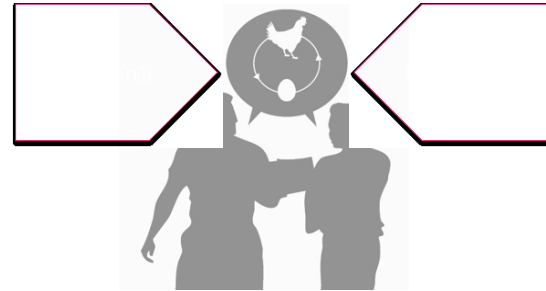
Toxic pesticides used by vegetable farmers

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).



Balancing concerns

- Nutrition over food safety ?



- Quality over quantity

- *'If you eat a lot, but not nutritious then what is the point of eating it'.*
- *'I rather be a bit hungry when I know that the food I eat is nutritious'.*
- *'I have 4 children, so I need to change the food regularly to provide them with a divers and nutritious diet that helps them grow'.*





The daily menu

Some highlights from ongoing research



A healthy cuisine at stake



- Diet appears healthy at a glance:
 - Per pita vegetable intake on average >290 gr/day
- **BUT** a trend towards:
 - Either: too little, too bad (little nutrition and low quality products)
 - Or: Too much, too sweet/fat



| BUDGET BOOK | |
|---|----------------|
| Reported weekly average food expenditure of low income households for the following products: | |
| Vegetables* 7x per week | \$5,08 |
| Fruits* 4x per week | \$4,08 |
| Meat* 5x per week | \$5,72 |
| Eggs 3x per week | \$2,04 |
| Seafood* 2x per week | \$4,40 |
| Rice, cereals, starch products 7x per week | \$5,24 |
| Dairy products 4x per week | \$4,32 |
| Total: | \$30,68 |



Risk of skipping the healthy diet



- Dietary issues potentially regard **70%** of Hanoi urban population

Unbalanced nutrition to lead to obesity: Experts


The country is facing a challenge of more and more obese children in big cities such as Hanoi and Ho Chi Minh City.

As living condition is improved, more children are taken care carefully and as a result, many of them are obese with 11.5 percent under age five and nearly 30 percent of high school students.

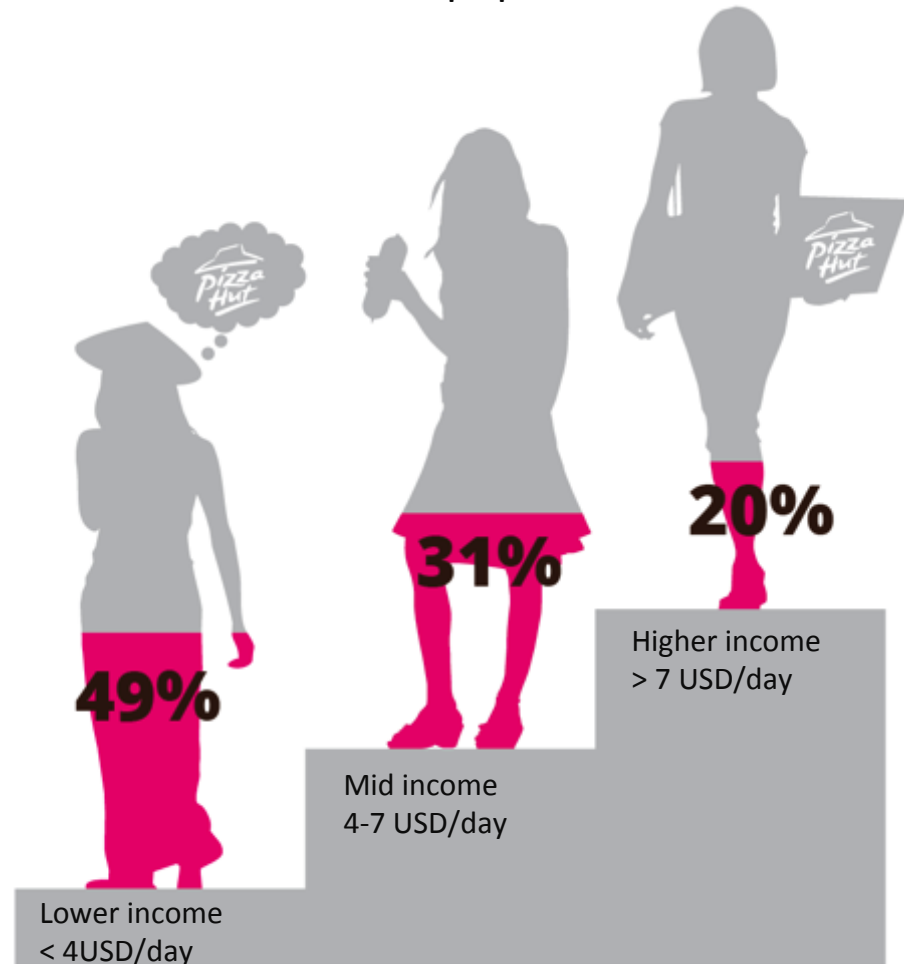
They eat improper meal with more meat than vegetable and fruit.

As per the city Nutrition Center's study of dietary characteristics of 360 students of junior schools Ho Thi Ky in District 10 and Phu Hoa Dong in Cu Chi District, it showed that the average protein intake of children was more than 160 per cent higher than the recommended daily allowance of 50 gram set by the nutrition center's warning.

Parents should pay attention to a balanced meal for children (Photo: SGOP)



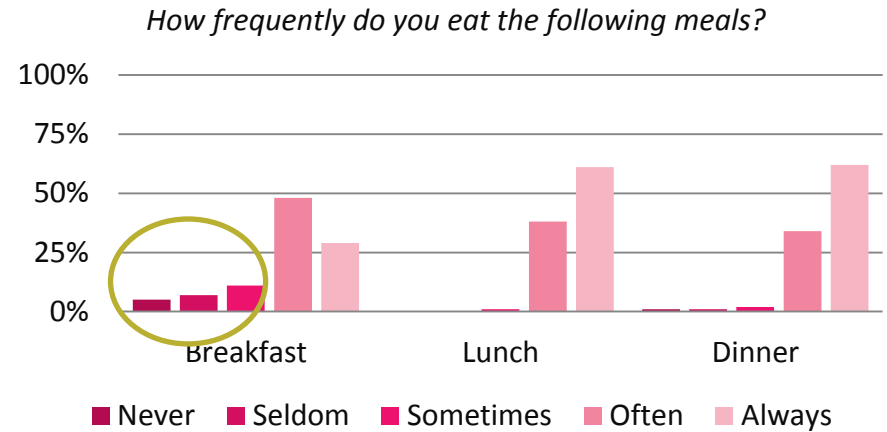
Fast food is aspirational:
Fast food is not embedded in BoP consumers' daily life, however going out for fast food is aspirational.



Three meals a day?



- Breakfast is the meal most skipped
- Lunch is the meal least skipped
- Meals are preferably eaten at home
- Lunch is the meal most eaten outside the home



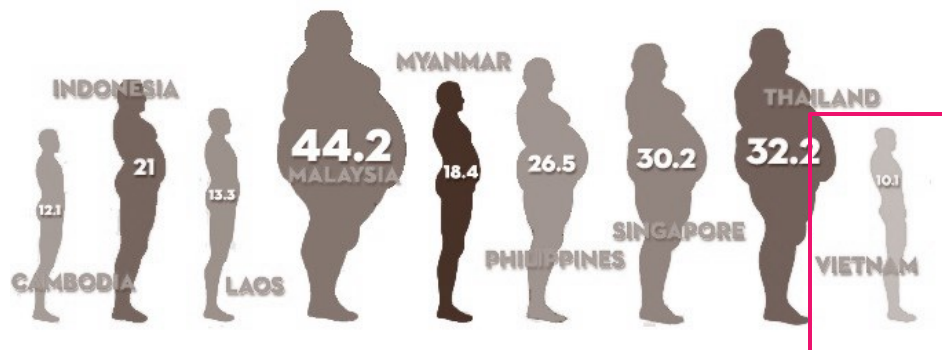
The burden of indulgence



- Many adults grew up in times of poverty and try to give their children everything they couldn't have:
 - *'We didn't have to eat so I want my grandson to be happy and look fat.'*
 - *'They serve pizza in front of his school. I know he should eat healthy, but he likes that so much.'*
 - *'I don't have time to cook in the morning. I give him sweetened cereals with sweetened milk for breakfast. I know unsweetened is better, but he doesn't like that.'*
 - *'We regularly visit KFC as our kids really love it.'*






- For how long?



Selective household nutrition



- Selective spending for children, ill and elderly
 - *"I prioritize to buy foods which are more nutritious for my children, so that they could grow better."*
 - *"I prioritize my parents – elderly people, because I live with them. I would buy foods which are rich in nutrition to support their health".*
 - *"I prioritize my husband because he is the breadwinner of my family".*
 - *"I prioritize my smallest child (2 years old) - Buy milk, fruits and other foods which are high in nutrition".*
- Focus on:
 1. fish 
 2. meat 
 3. fruit 

(imported / non-China)





Future challenge

Access to nutrition



Nutrition appears exclusive

- Safe and healthy vegetables are indispensable in a healthy diet but access is limited in terms of:

1. Income



2. Action radius



3. Knowledge

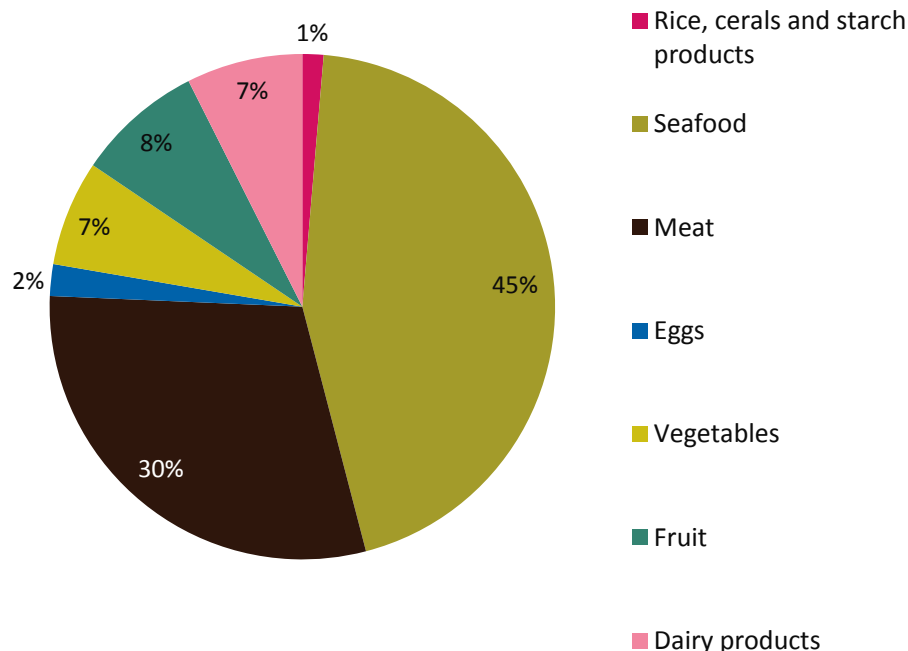


Nutrition vulnerability & income



- Nearly 50% of the urban population is nutrition vulnerable
 - Budget constrained in dietary choices
 - Daily food budgeting
 - Late morning market shopping

If I would have more money to spend on food, I would spend it on..



Report of shopping trip with a garbage collector, 11am Thursday :



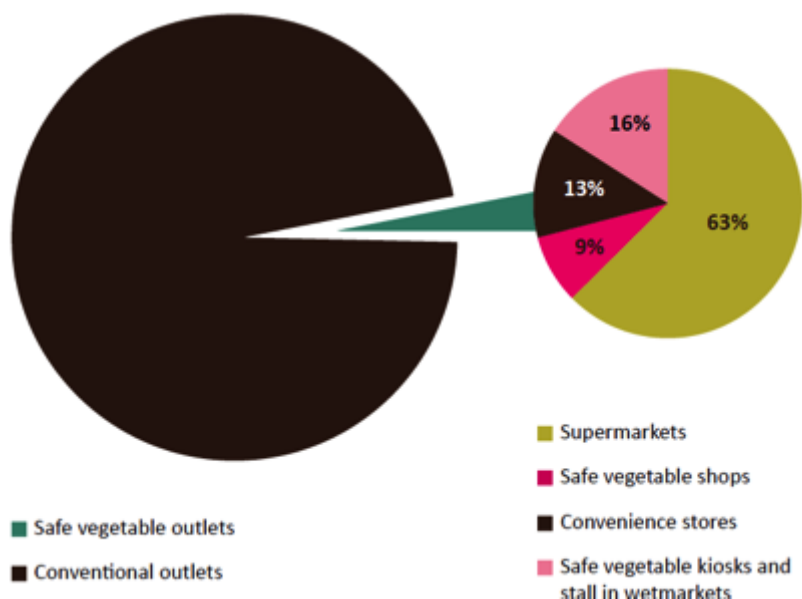
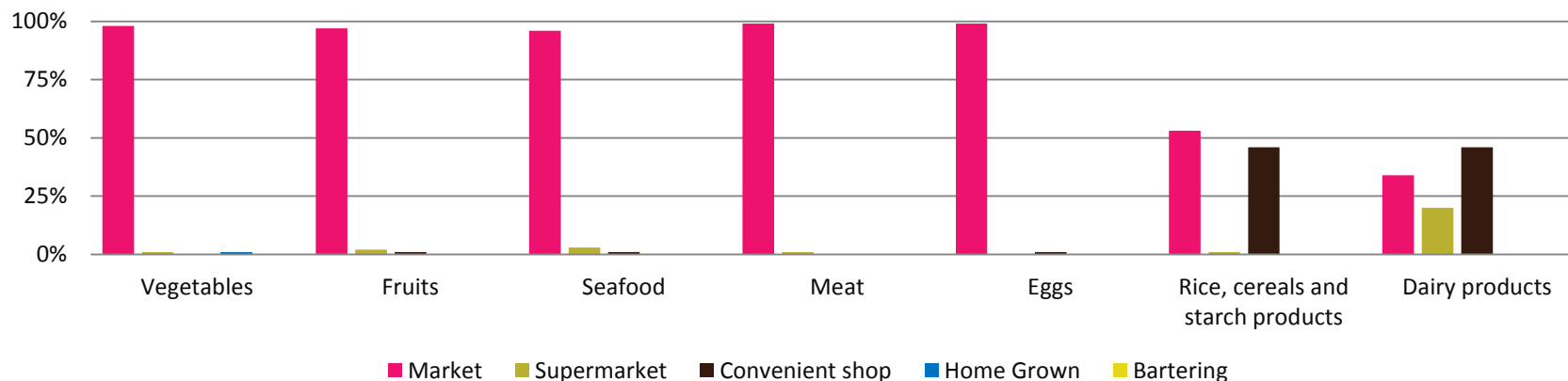
Ms. Thuan wants to buy cabbage. She weighs several cabbages and selects one. The selected cabbage costs 17,000 VND. She bargains to reduce the price, but the seller refuses and instead some left over pak choi at a good price. They make a deal and Ms Thuan is happy to get almost one kilo of pak choi for 7,000 VND.

Nutrition vulnerability & action radius



- Markets (incl. street vending) are essential for daily vegetable consumption

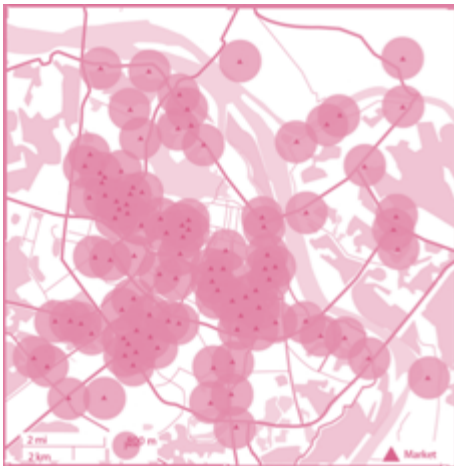
Low income consumer purchase channel per indicated food item (%)



Nutrition vulnerability & action radius



- Policy: wet-market reduction and supermarket stimulation
 - Reduction of access to healthy / unprocessed foods
 - Supermarkets not (yet) in lower income neighbourhoods (50% of urban population)
 - Supermarket suspected to drive obesity: offering processed and convenience foods that are not necessarily contributing to better health



Hanoi wet market network (anno 2012)



Hanoi wet market network plan 2020-2030



Retail census map 2012: www.freshstudio.vn

Nutrition vulnerability & action radius



■ Walking and talking

- The market is a place for daily social talk within the neighborhood.
- The market is close by. People shop in a radius of 300m from home.
- Price negotiation at the market is enjoyed as social interaction.



■ Shopping without stopping

- Shopping groceries should be quick and convenient.
- People buy at street vendors along the main roads on the way home from work.
- Price negotiation is a 'hassle' and is time consuming.

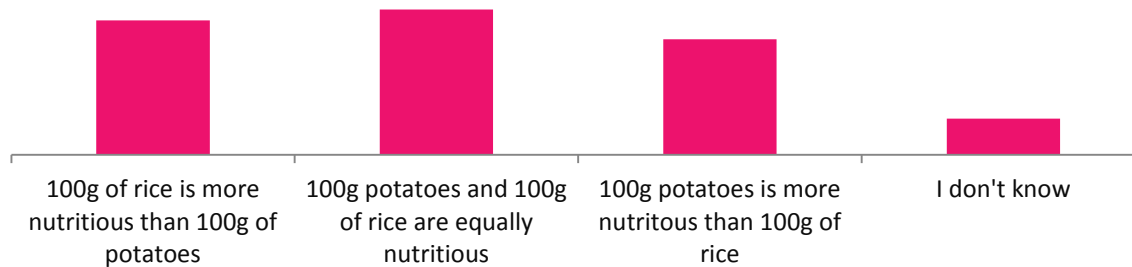


Nutrition vulnerability & Knowledge



- Beginning knowledge on nutrition

- EXAMPLE on potato and rice:

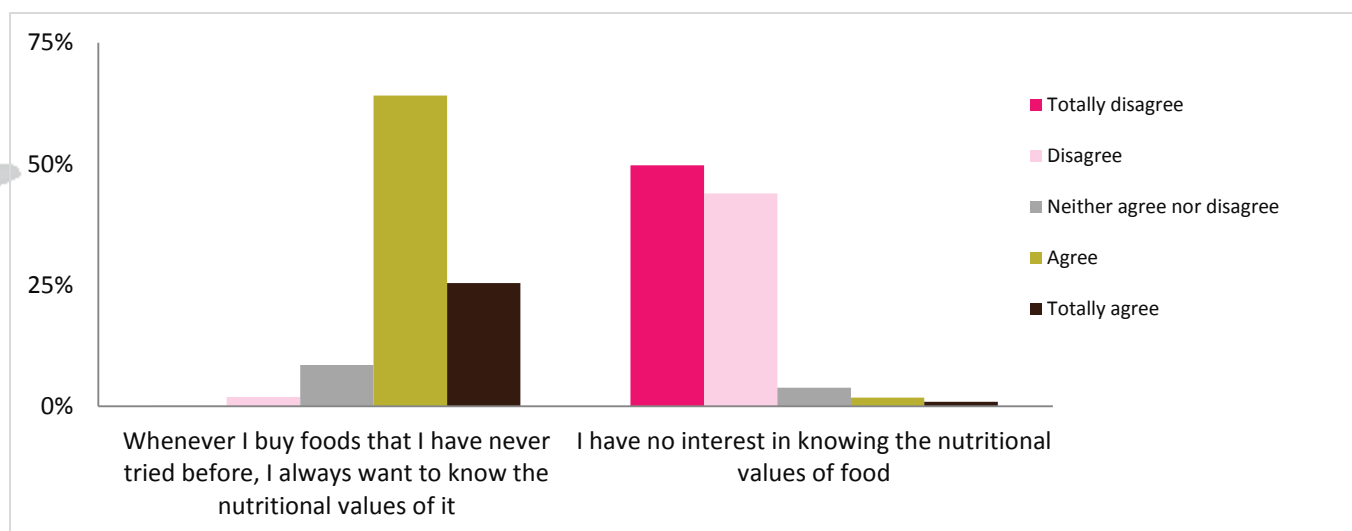
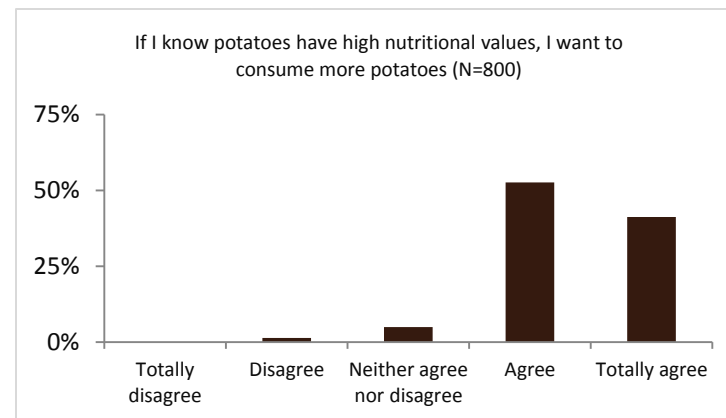


Interest in nutrition information



- >90% of consumers is interested in nutrition information

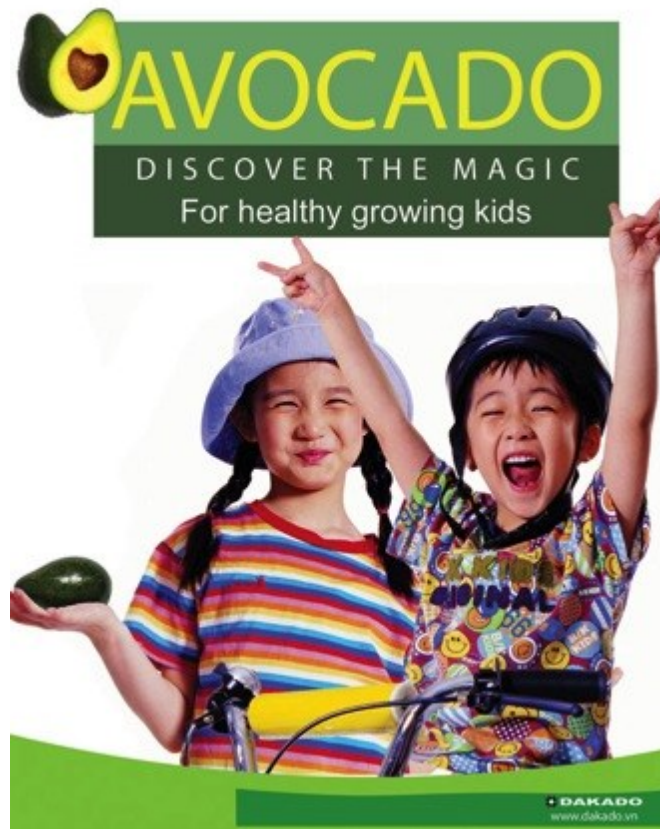
'When knowing nutrition details, I can estimate whether it is worth to buy a product'.



Avocado Nutrition campaign



- Demand for avocado doubled:
 - 92MT in '07
 - 171 MT in '09



BƠ TRÁI - THƠM NGON & BỔ DƯỠNG

avocado - delicious nutritious

SALAD BƠ VỚI PETA

Ngon, mát, bổ và dễ làm

Thời gian: 5 - 10 phút

Nguyên liệu (cho 1 người ăn):

- 1 cây rau xà lách Romaine
- 200gr phomat feta (phomat sữa dê), sữa chua là loại phomat loại Feta của Ý
- 1 trái bơ nhỏ (khoảng 200gram/100) hoặc là nửa quả bơ to (khoảng 400 gram/100)
- Bánh mỳ croutons (bánh mỳ lát, cắt vuông, chiên giòn)
- 20ml dầu ôliu
- 3-4 thìa giấm trắng
- ½ thìa chanh
- ½ thìa tỏi tươi
- ½ thìa đường
- Sốt, muối, ớt, xì dầu tùy khẩu vị của bạn

Thực hiện:

Bước 1: Rửa sạch rau xà lách, cắt bỏ rễ và rửa sạch.沥干水分.

Bước 2: Cho rau xà lách vào bát và trộn đều bằng tay.

Bước 3: Cho thêm 20ml dầu ôliu và trộn đều.

Salad:

- Rau và sữa chua rửa sạch, cắt bỏ rễ và rửa sạch.沥干水分.
- Cắt bơ nhỏ để làm ra chất béo (2) (nếu bạn không thích màu vàng, không cắt)
- Cắt bơ nhỏ thành miếng nhỏ (3)
- Cắt phomat feta thành miếng nhỏ và dễ trộn (4) và sữa
- Cho thêm bánh mỳ giòn theo khẩu vị (5)
- Trộn đều giấm trắng và đường theo khẩu vị (6) và trộn đều
- Cho thêm sốt tùy khẩu vị (7)

Bắt đầu:

- Chọn nguyên liệu ngon và cho thêm một chút dầu phộng vào salad.

Thành phẩm:

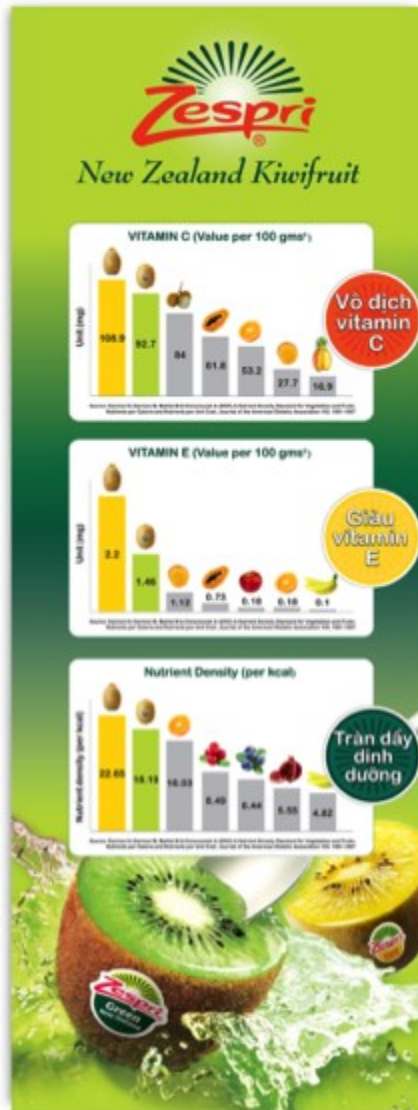
Salad bơ với Peta

Tham khảo thêm:

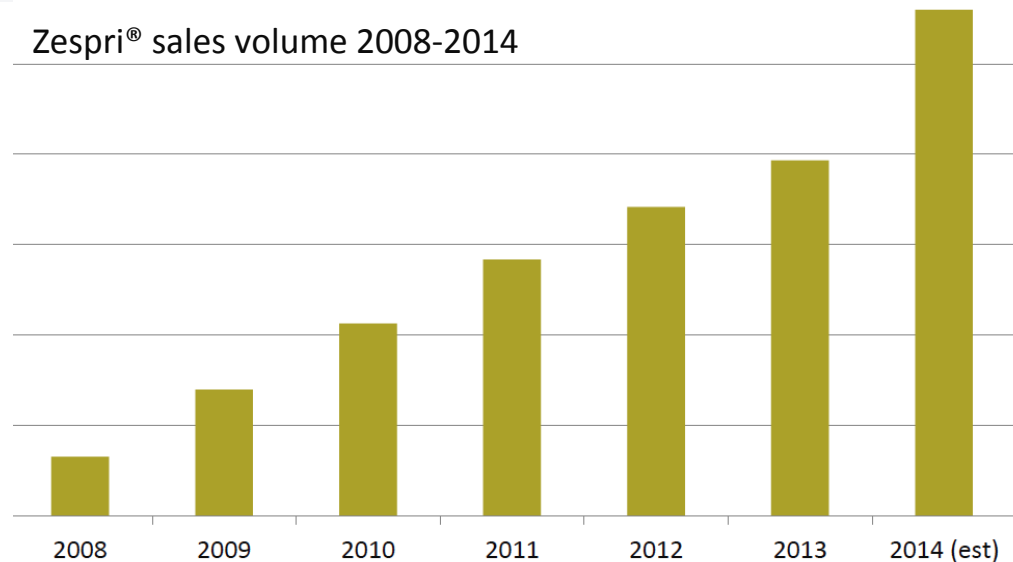
DAKADO

www.dakado.vn

Zespri® Health and Nutrition campaign



Zespri® sales volume 2008-2014





Project example

Dietary intervention



FDOV 'Growing out of poverty with potato'



- Food security and pro-poor development – a value chain approach 2014-2019



- Consortium



Objectives of the project



Vietnam to benefit from the Dutch expertise in potato:

- Increase food security in Vietnam
- Promote sustainable potato production
- Increase farmer incomes
- Create new job opportunities
- Establish a strong potato sector
- Improve livelihoods:
 - Women empowerment
 - Mechanization
 - Nutrition



Locations in Vietnam



- The project will focus on the Red River Delta and the Central Highlands regarding potato production activities
- 5 provinces were selected to initially focus on:
Nam Dinh, Thai Binh, Bac Ninh, Bac Giang and Lam Dong
- The project is not confined to these provinces
- Marketing activities will focus on Hanoi and Ho Chi Minh City



Project activities



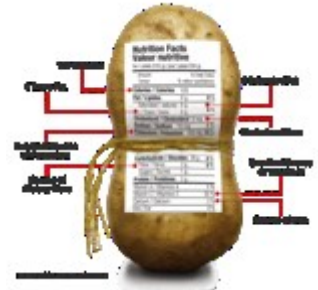
- Farmer extension services:
 - Training
 - Regular farm visits
- Introduction of improved potato production techniques:
 - Dutch potato varieties
 - Mechanization
- Potato marketing:
 - Consumer preferences
 - Potato consumption promotion



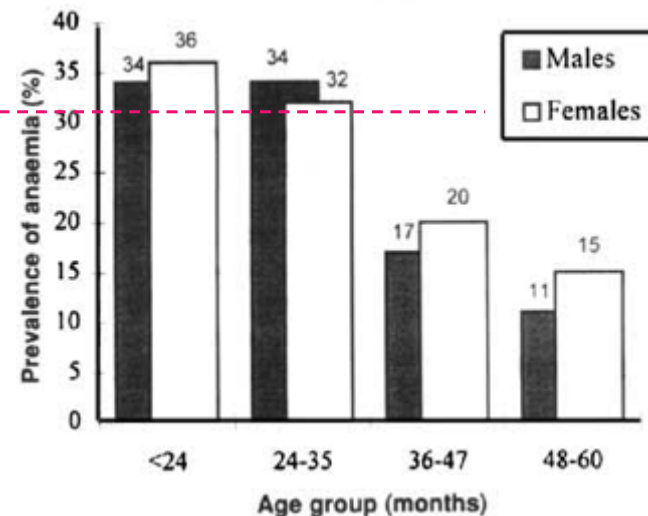
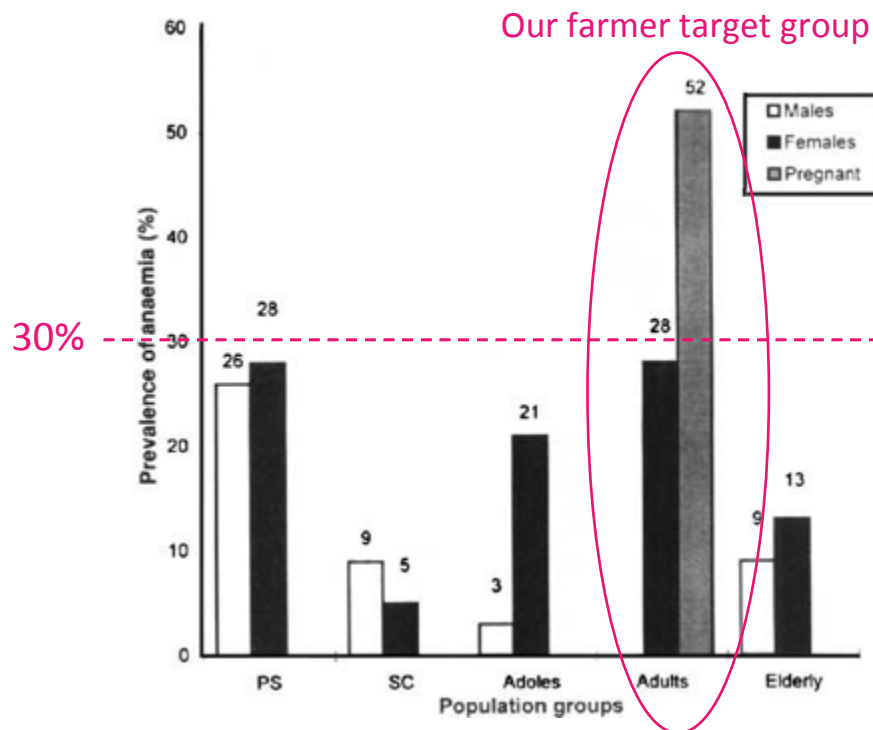
Dietary improvement



- Hidden hunger of micro nutrient deficiency (plain rice diet)
 - Anaemia prevalent among women and small children
- Importance of cultivars with smooth skin and shallow eyes
 - The potato skin contains five times the amount of iron as the whole rest of the potato.



A powerhouse of nutrients, like **potassium, vitamin C** and **iron**.



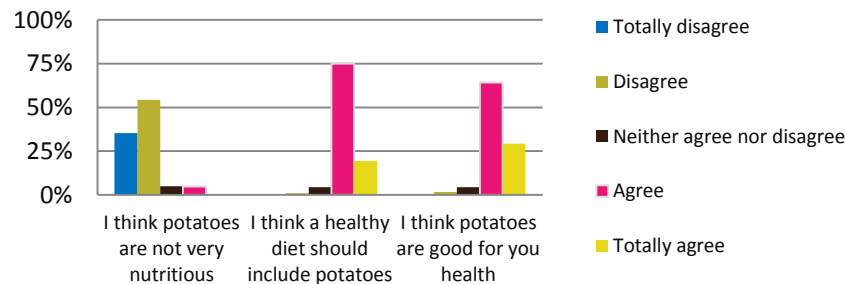
Challenge ahead



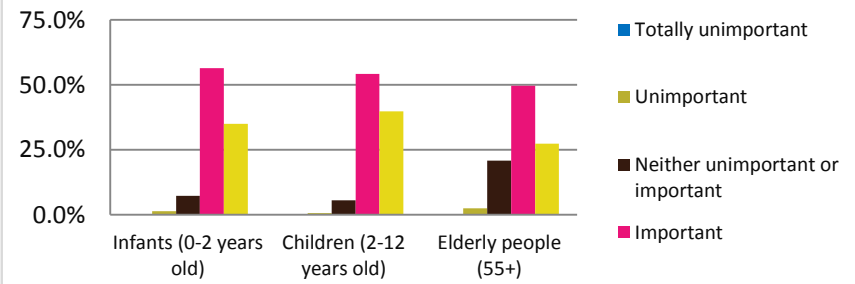
- Potato has a positive health connotation, but how to introduce it into the daily diet?



How much do you agree with the following statements?



How important is it for the health of the following groups to have potatoes in their diet? (N=800)





Discussion starters

Access to nutrition

Discussion starters



- Dietary interventions
- Retail and distribution network interventions
- ...

Thank you



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