

# Metropolitan Food Security

link between

Market, Research and Processors/Technology

**GMV**

Ir. Jan Hak, president

*Dutch Manufacturers of Machinery for  
Food Processing and Packaging*

MFS Conference, Beijing – China  
11 May, 2011



# Metropolitan Food Security

## Agenda:

- Introduction to GMV and DHV
- Performances in processing technology and products
- Ambitions with market led approach
- Innovations in cooperation, research and education
- Conclusion



## 1st GMV (Potato) Technology Mission

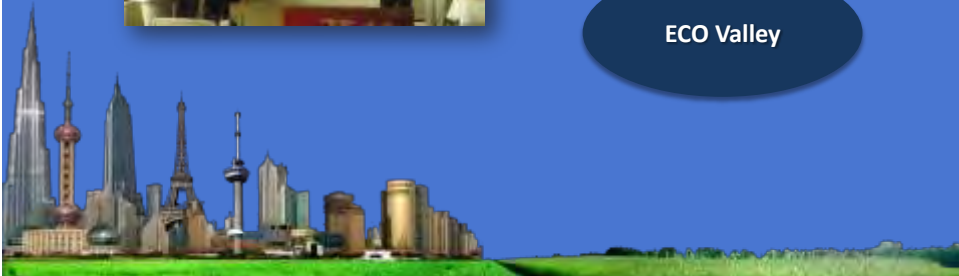
Since 1985, more then 25 years joint focus



Hak Handan  
opening

Hengshui -  
Westland

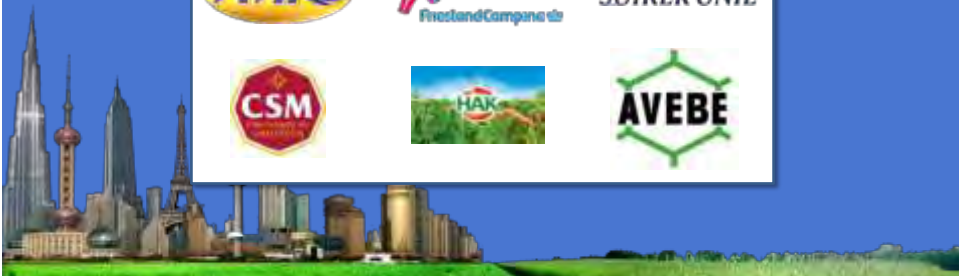
ECO Valley



## The Netherlands as 'Food Valley'

Turnover 2010: EUR 68 billion in agri-food products

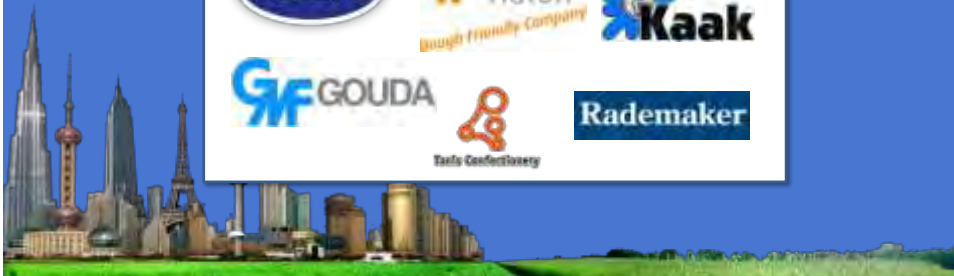
**Home country of world leading food companies**



## The Netherlands as 'Food Valley'

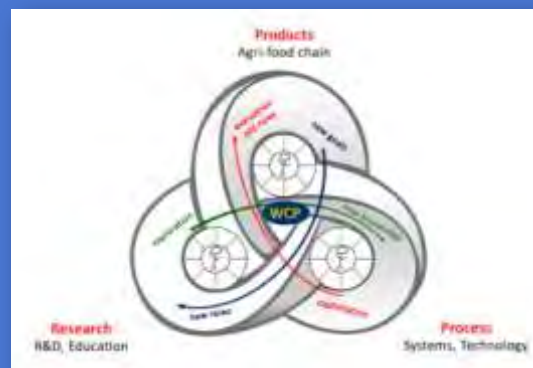
Turn-over 2010: EUR 3,3 billion in processing equipment and research  
(80% poultry, 70% cheese and > 50% potato processing systems)

**Home country of world leading companies in food technology**



**GMV**

## World-Class Performance (WCP)



## World-class performance initiatives:

- **Positioning:**

Center of excellence "Food & Flower"

*Food & Nutrition Delta - Food Valley – EUKP7 – Genomics – 9 Dutch Topics*

- **Research:**

Food & Nutrition Delta

*Safety - Nutrition & Health - Sensory Science and Structure – Behavior*

- **Education:**

Platform AcedeMI - IO / SVML

*(Social) Innovation - ICT – Know-how sharing*

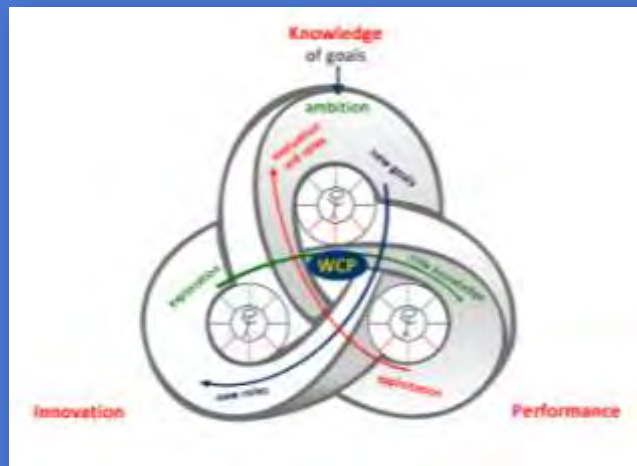
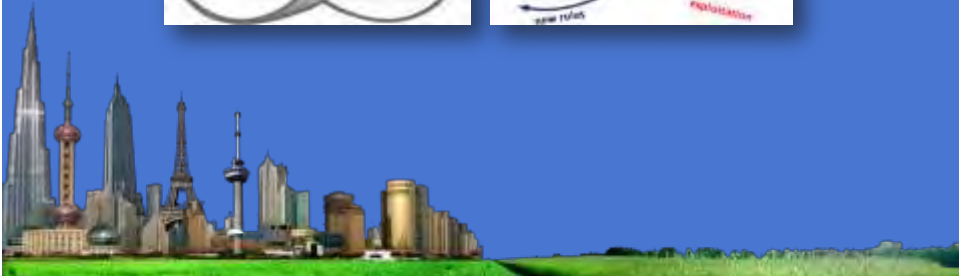
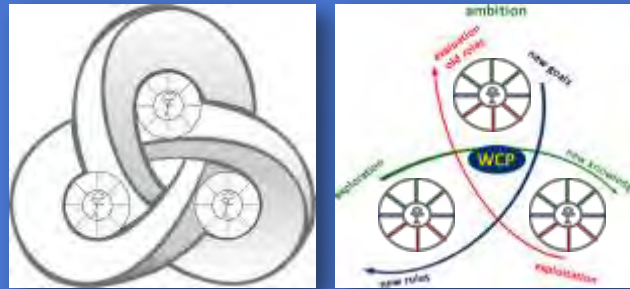


## Road to Success:

- **Ambition**
- **Innovation**
- **Performance**



# Human Capital



## Food Safety and Security

According to Dongyu Qu & Kaiyun Xie (2008)

- Quantity and Quality
- Nutrition value and medicinal functions
- Poverty elimination and crop rotation
- Energy security and sustainability
- Natural disaster relief



## Constrains in China (and other BRICS – countries)

According to Dongyu Qu & Kaiyun Xie (2008)

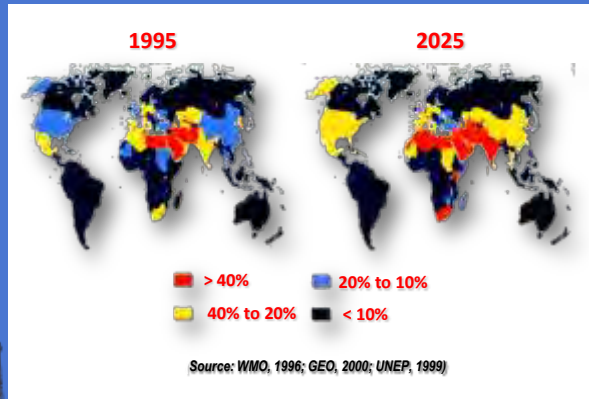
- Huge area, low yields
- Breeding and extension of new varieties
- Seeds supply systems and certification
- Chain quality control and management
- Logistics
- Supply chain management
- Added value creation



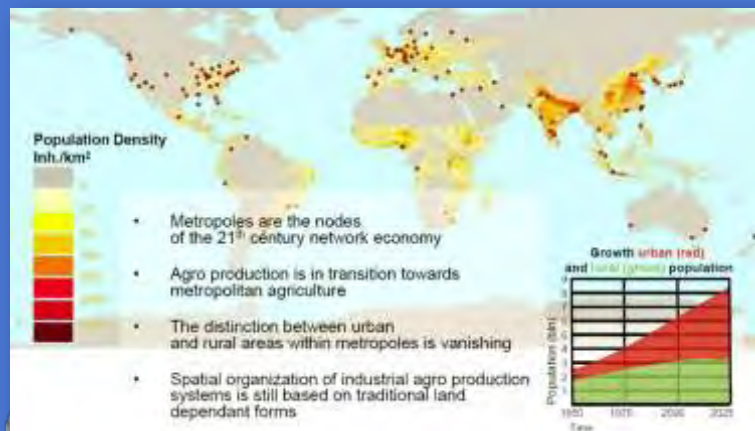


## The (fresh) water stress

Withdrawal as a % of total

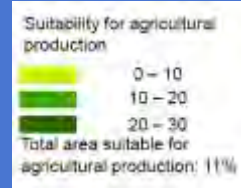
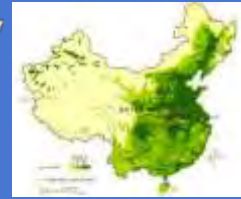
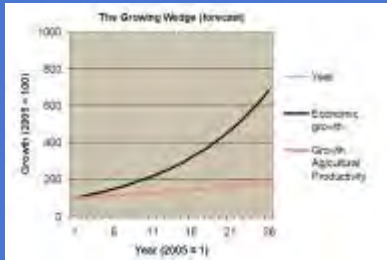


## The world is Urbanising



### The growing Wedge

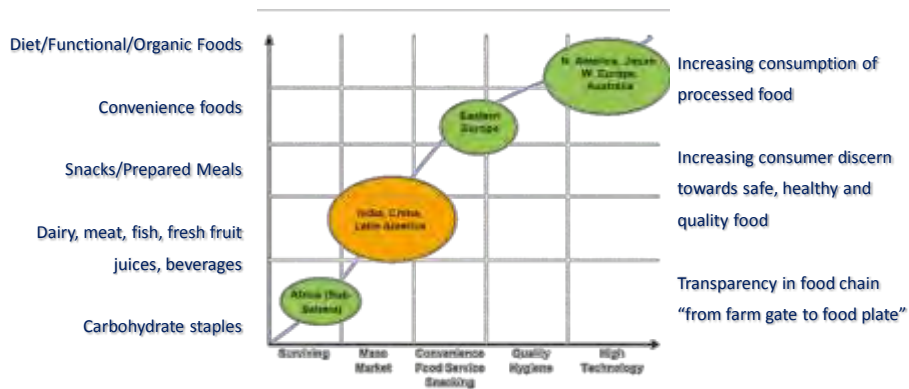
China's agricultural growth lags behind on economic growth



Jump in agricultural productivity is necessary to meet growing demand of middle class. Still, there will be growing import of agricultural products.



### Urban people have more purchasing power: shift in consumption basket





### Diversification of demand in Metropolises: from food to fashion to pharmaceuticals



**Energy and building**  
*Fuel, fibers*



**Food**  
*Fodder, food crops,  
vegetables, fruits*



**Fashion**  
*Flowers, flavors,  
fragrances*

**Pharmaceuticals**  
*Functional foods,  
pharmaceuticals*



World spending on luxury goods in 2005: US\$ 165 bln



Which is a 100-fold increase between 1977 and 2005



### Strategic outlook



**World**

Growing population, increasing urbanisation,  
water and food shortage



## Strategic outlook



### Society

Ageing population

Growing high(er) income population

Wealth of choice

Increasing incidence of chronic non-communicable diseases like:

*Obesity, Cardiovascular diseases, Hypertension, Diabetes mellitus and various cancers*

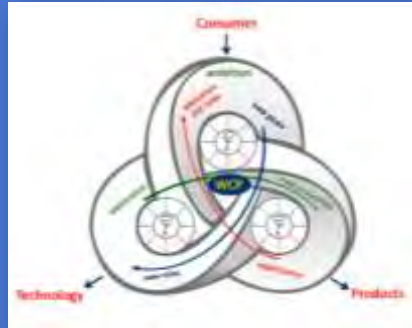


## Function of food

- **WHAT** Calories → "experience" → nutrition & health, variety
- **WHEN** Regular → grazing and snacking
- **WHERE** In-home → out-of-home
- **WITH WHOM** Social → individual
- **HOW PREPARED** From scratch → ready-to-eat, heat and eat



## Market led approach



## Megatrends

In society, according to Wim Lageweg (MVO -2011)

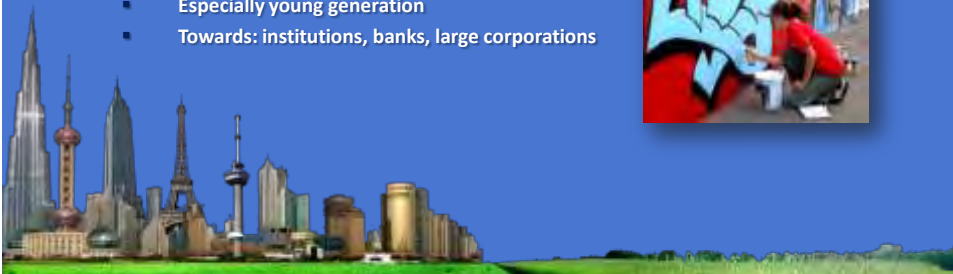
### Needing social cohesion (and safety)

- Especially older generation
- In more individualistic world



### Increasing suspicion (decreasing authority)

- Especially young generation
- Towards: institutions, banks, large corporations



## Megatrends

In society, according to Wim Lageweg (MVO -2011)

### Needing "Roots and Wings" (and origin)

- Especially cultural "creatives", self determination
- Regional identify, interest in origin and process



### Stressing sustainability

- Especially awareness of scarcity

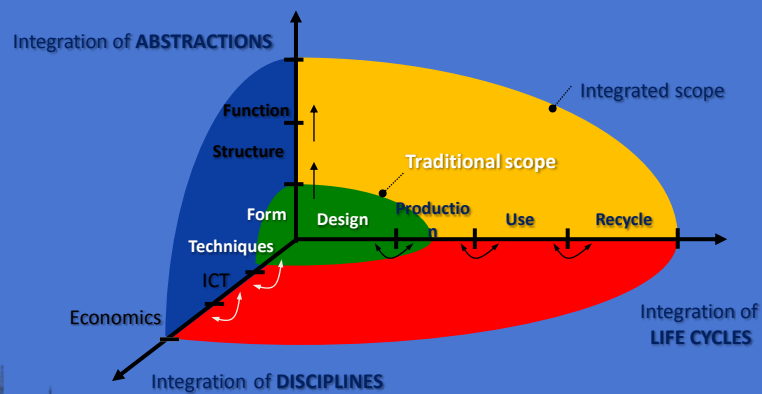


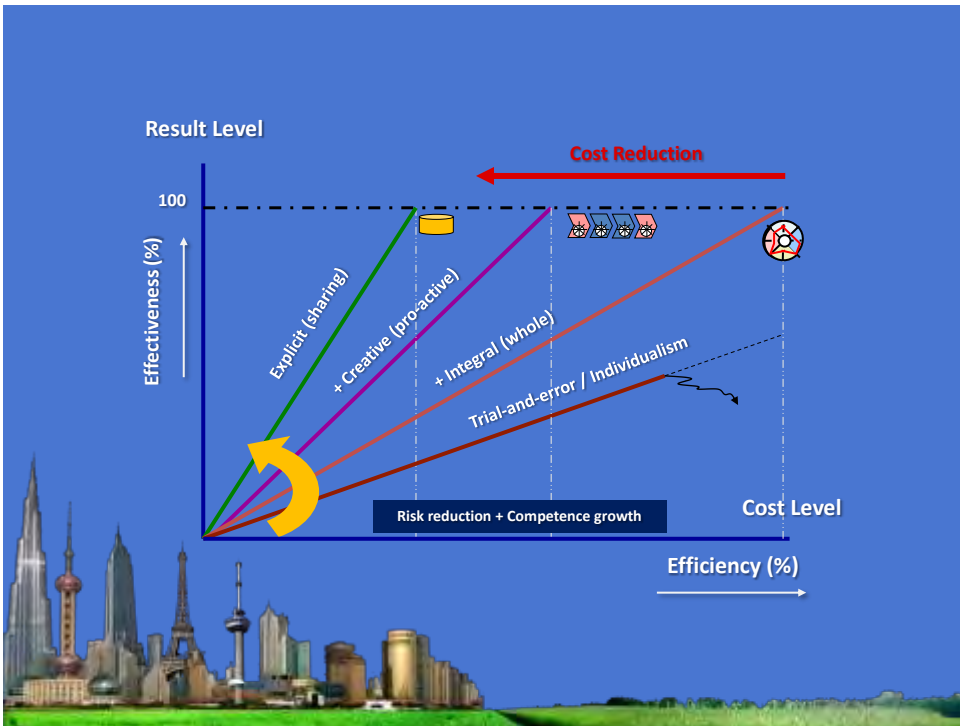
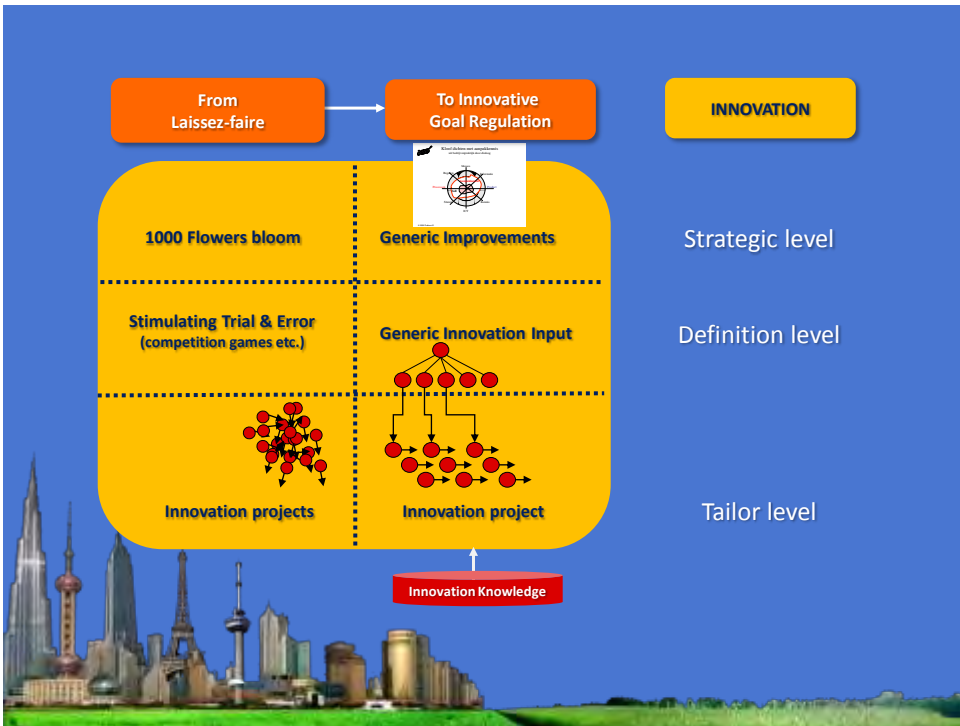
### Increasing transparency

- Especially sharing knowledge
- Pressure on media, social media



## Integrated approach to product and process development





## Trends and Needs

Market	Organization	Product	Information
decisive	flexible	added value	fast
cost reduction time to market product flexibility	head-tail co-development self regulating	product support maintenance control	design tools 3d models configuration management
trends ↑ ↓ needs			
enterprising market-oriented methodic communicative	project engineering marketing / innovation cost engineering it knowledge	life cycle analysis and design design optimization	
problem solving	multi-disciplinary	integralist	
Attitude	Knowledge	Profile	

## Transitions in marketing approaches over the next 10 years

### From

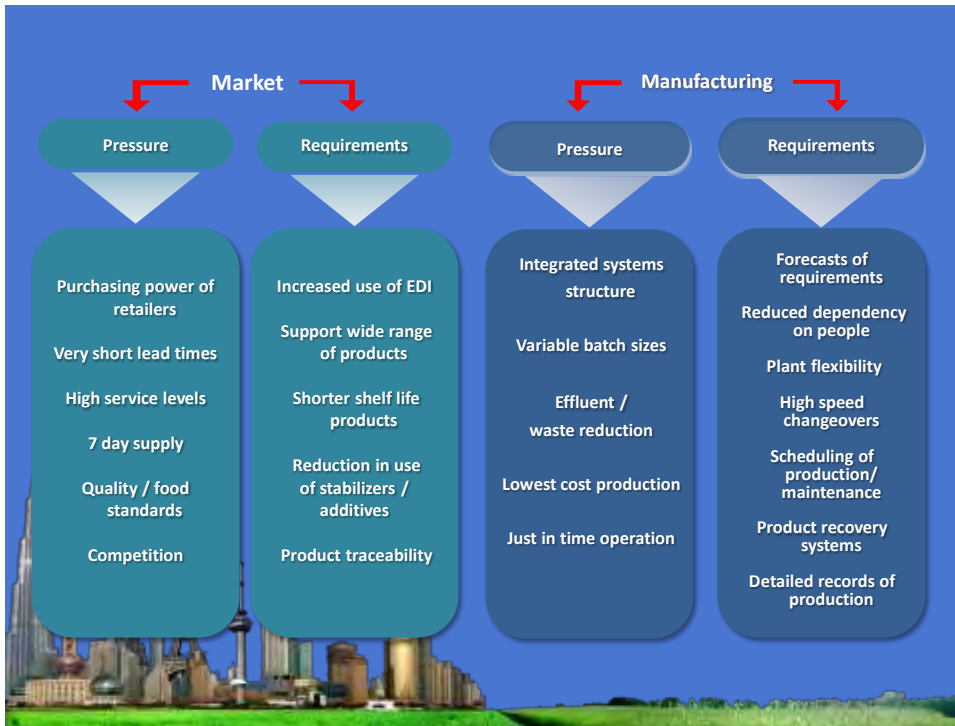
- Store and locations as greatest assets
- "One to Many" mass marketing
- Transactions and traffic flows
- SKU's and product profitability
- Offering a product range
- Single channel access
- Right product, place and time
- A monolithic customer offer
- Data on what is bought
- Marketing as an "add-on" department
- No one in the organization (except CEO)
- Benchmarking
- Customer loyalty schemes



### To / As well

- Customers as greatest assets
- "One to One" mass customization
- Customer lifetime value
- Customer and market basket profitability
- Offering solutions and an experience
- Multi-channel access
- Anything, Anytime, Anywhere
- (Multiple relationship options)
- Knowledge on what is bought by whom and why
- Marketing as a core competence
- Customer-centric forms of organization
- Path breaking
- Customer loyalty as the creed of business





### Innovations in the Potato – Chain



#### Seed Potatoes, genomics

*Clean room technology, gen manipulation*



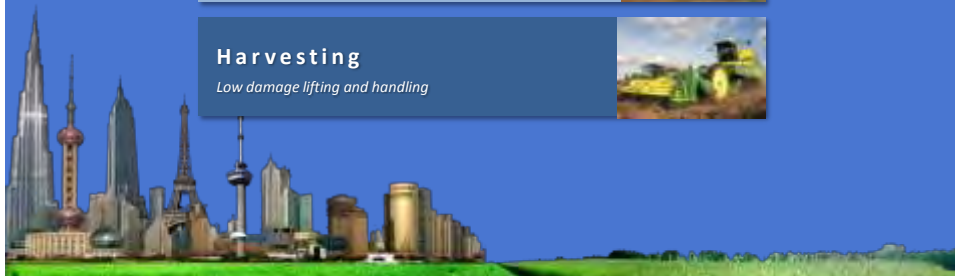
#### Cultivating

*Drip irrigation, crop rotation in (semi) arid areas*



#### Harvesting

*Low damage lifting and handling*



## Innovations in the Potato – Chain



### Storage

*Optimal storage, conditioning*



### Processing, packaging

*Starch, flakes, french fries, etc.*



## Innovations in the Bakery - Chain



### Grain, genomics

*Clean room technology, gen manipulation*



### Storage

*Optimisation storage, conditioning*



### Milling



## Innovations in the Bakery - Chain



### Processing

*Hard and short dough, wafers, pastry, biscuits, bread and croissants*



### Packaging

*Flow pack*



## Innovations in the Fruit and Vegetable – Chain



### Fruit and vegetables, genomics

*New varieties, gen manipulation*



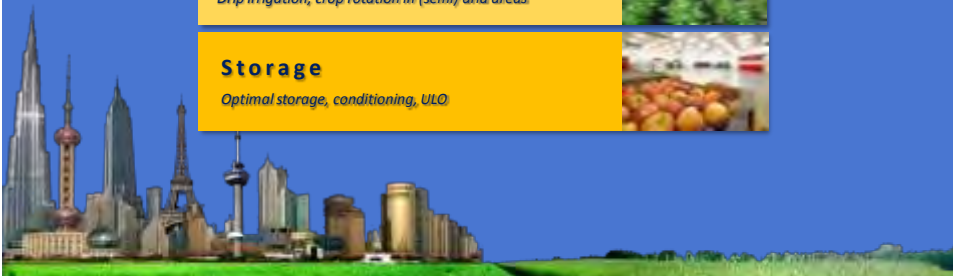
### Cultivating

*Drip irrigation, crop rotation in (semi) arid areas*



### Storage

*Optimal storage, conditioning, ULO*



## Innovations in the Fruit and Vegetable – Chain



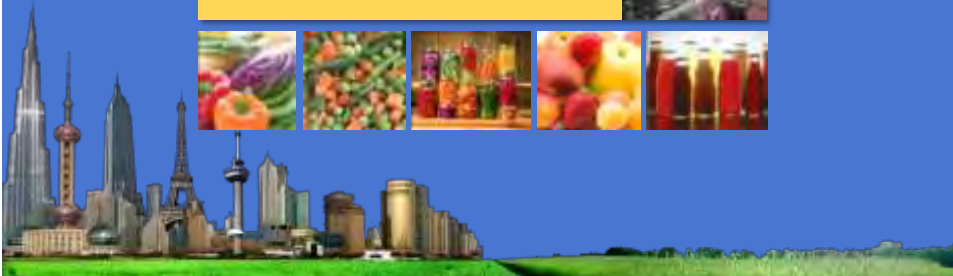
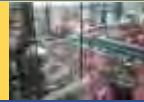
### Processing

*Fresh handling, freezing, heat preservation, dehydration, infusion, pressure preservation, etc.*



### Packaging and Logistics

*Controlled atmosphere, handling automation, ICT*

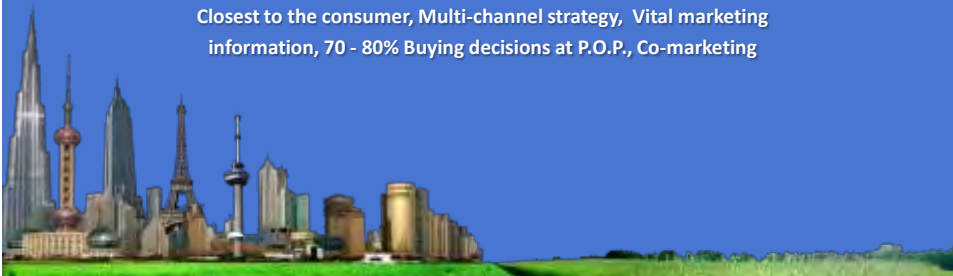


## Improving supply

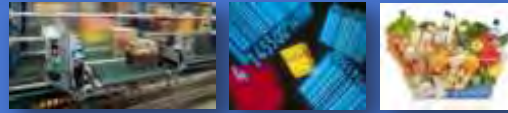


**Shift of power to retailers and food service sectors:**

Closest to the consumer, Multi-channel strategy, Vital marketing information, 70 - 80% Buying decisions at P.O.P., Co-marketing

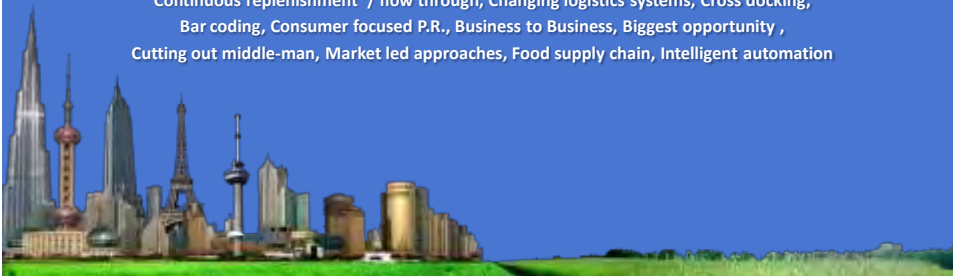


### Improving supply

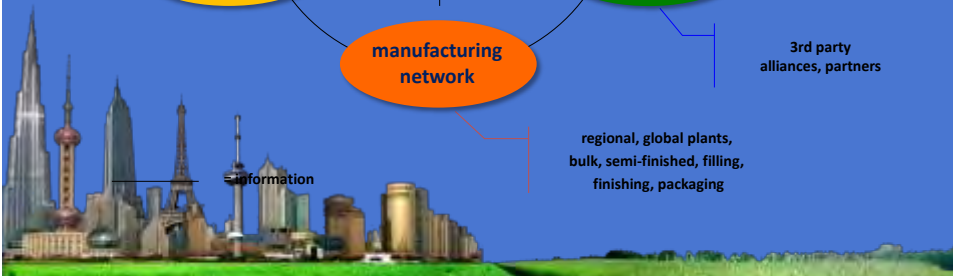
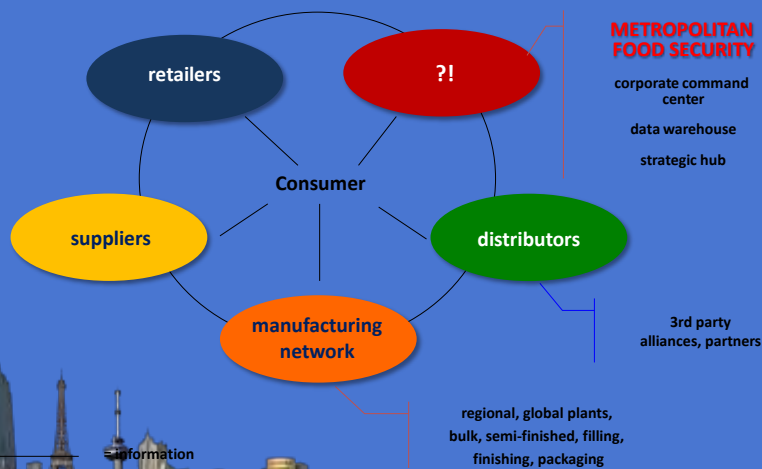


### Supply management

Continuous replenishment / flow through, Changing logistics systems, Cross docking, Bar coding, Consumer focused P.R., Business to Business, Biggest opportunity, Cutting out middle-man, Market led approaches, Food supply chain, Intelligent automation



### Future food supply chain

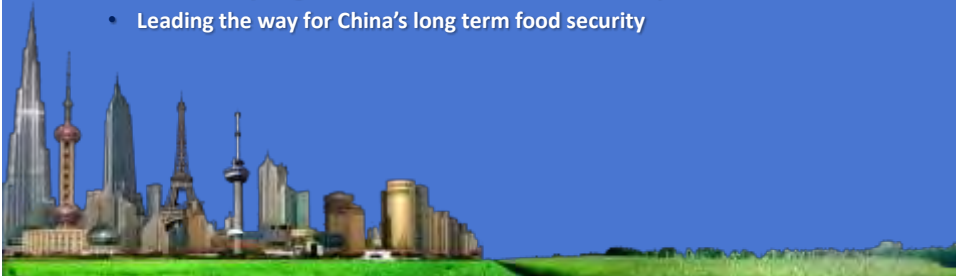




## COFCO – Eco Food Valley

### vision on Metropolitan Food Security

- World class showcases in sustainable development  
*(efficiency of asset utilization (people, land-water-energy, know-how))*
- Driver for economic development through innovative food production
- Maximize synergies between rural and urban development
- Leading the way for China's long term food security



### 'Creating MFS': Strategy for Success



1. People
2. Professionalism
3. Plan
4. Pro-active
5. Positive attitude
6. Performance
7. Planet
8. Prosperity



*Thank you !*

For more information, please visit our website:

**GMV**

[www.gmv-fme.nl](http://www.gmv-fme.nl)

