

# Metropolitan Food Security

link between

Market, Research and Agri-Food Technology

**GMV**

Member of **FME**  **CWM**

**Ir. Jan Hak, president**



# Metropolitan Food Security

## Contents:

- Introduction GMV
- Performances, technology and products
- Ambitions, market led approach
- Innovations in cooperation, research and education
- Vision



# The Netherlands as 'Food Technology'

Home country of world leading food companies

Turnover 2010: EUR 68 billion in agri-food products



# The Netherlands as 'Food Valley'

Home country of world leading companies in food technology

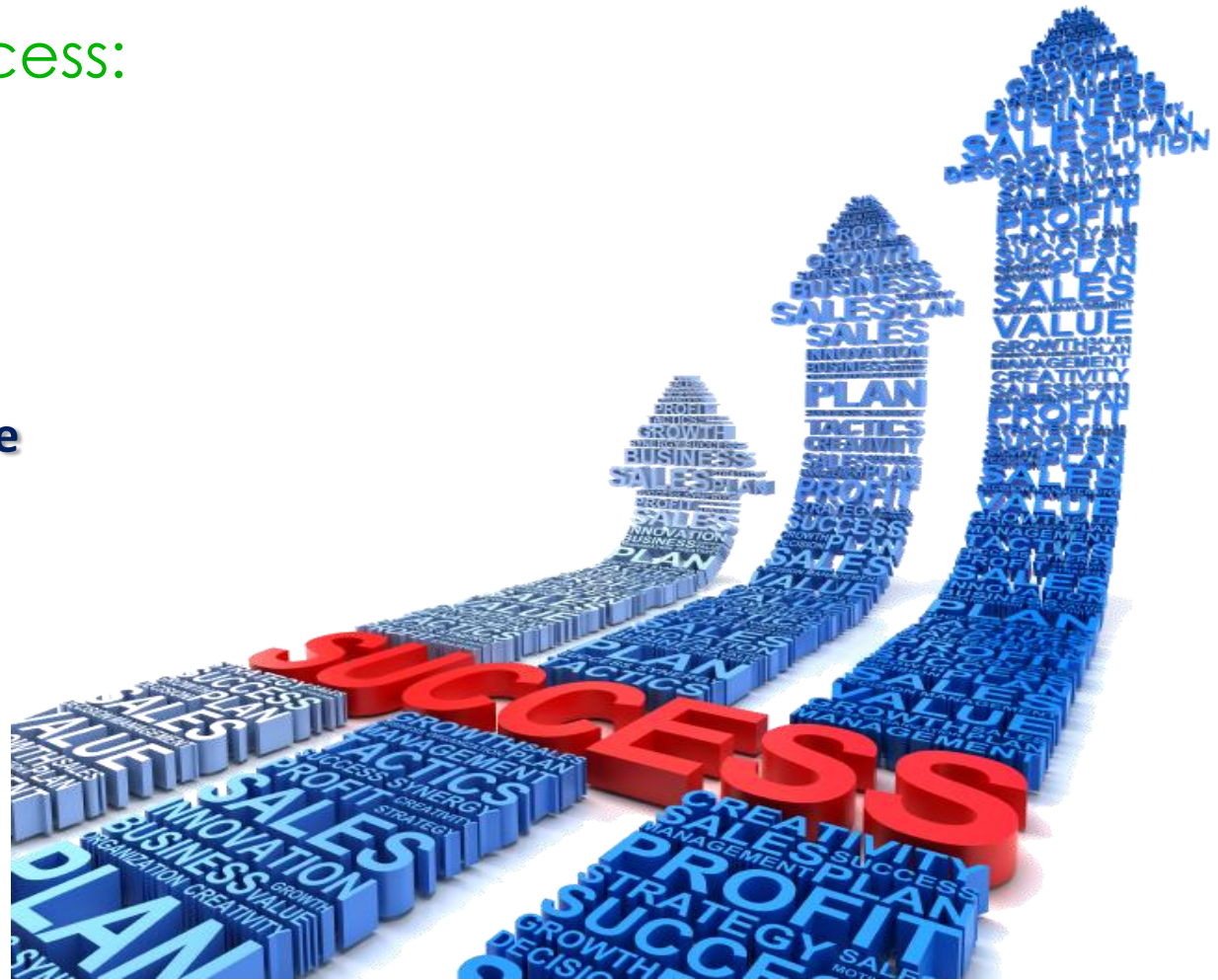
Turn-over 2010: EUR 3,3 billion in processing equipment and research

*(80% poultry, 70% cheese and > 50% potato processing systems)*



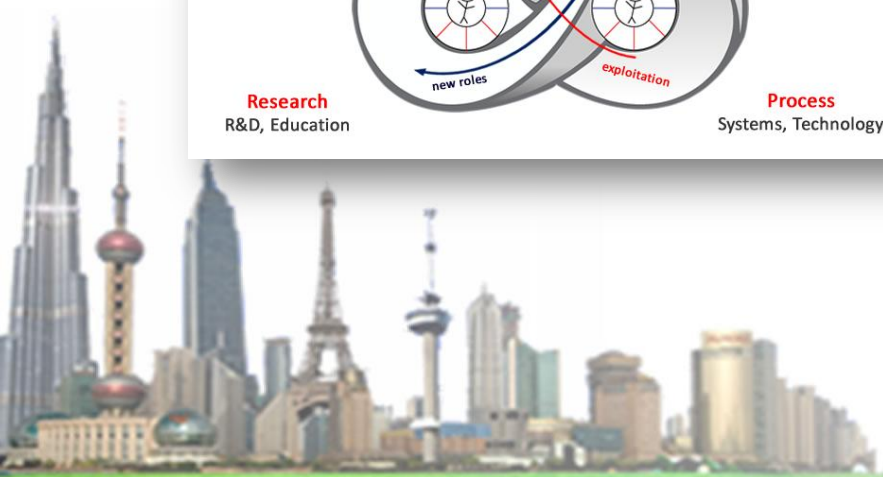
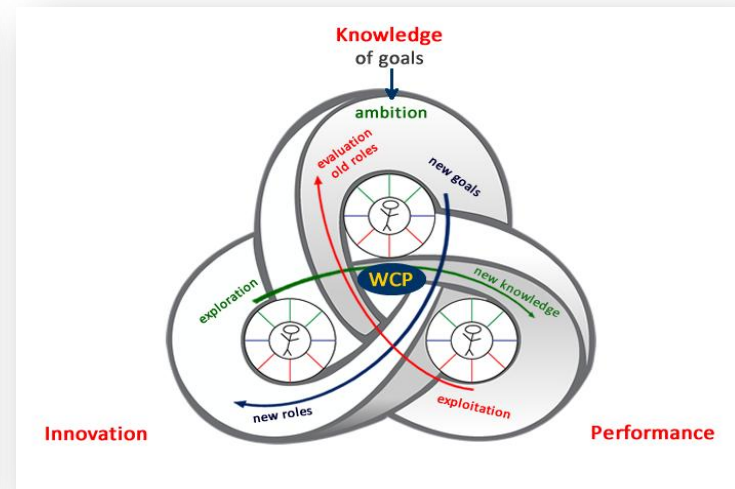
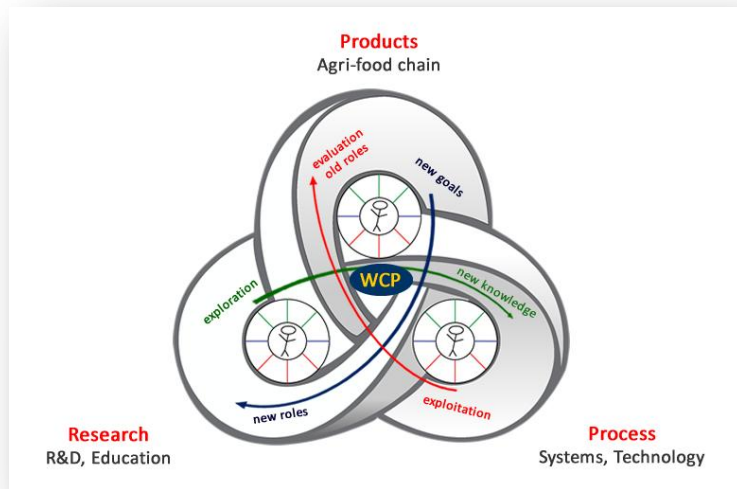
## Road to Success:

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





# World-Class Performance (WCP)



# World-class performance initiatives:

- **Positioning:**

**Center of excellence “Food & Flower”, Metropolitan Food Security**  
*Food & Nutrition Delta - Food Valley – EUKP7 – Genomics – 9 Dutch Top Sectors*

- **Research:**

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

- **Education:**

**Platform AcadeMI – IO, SVMIL Association**  
*(Social) Innovation - ICT – Knowhow sharing*



# Food Safety and Security

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





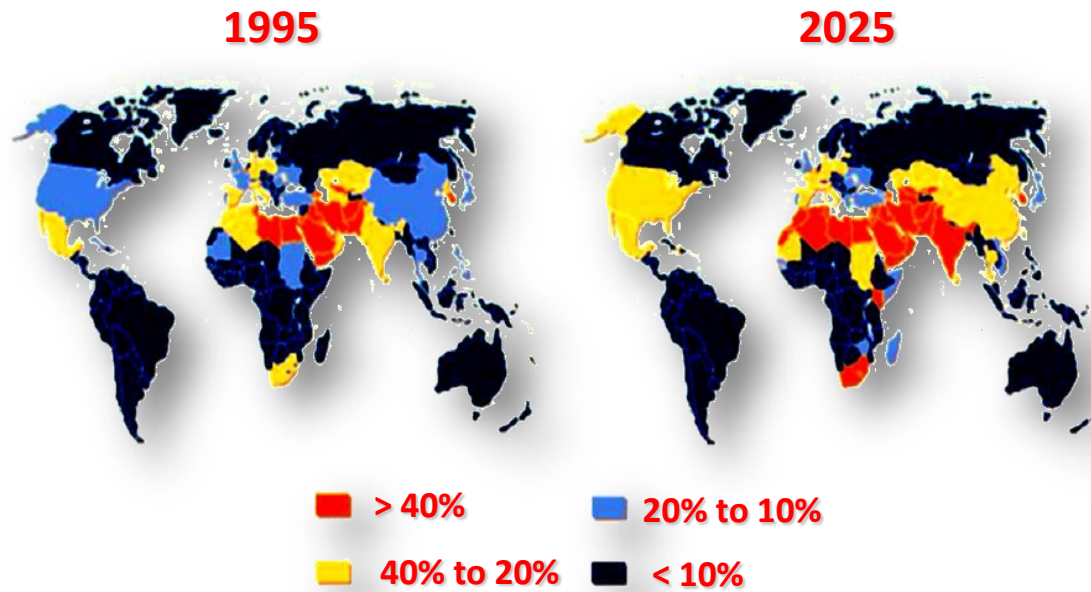
# Constrains in BRICS – and developing countries

- **Huge areas, low yields**
- **Breeding and extension of new varieties**
- **Seeds supply systems and certification**
- **Added value creation**
- **Logistics**
- **Chain quality control and management**
- **Demand and supply management**



# The (fresh) water stress

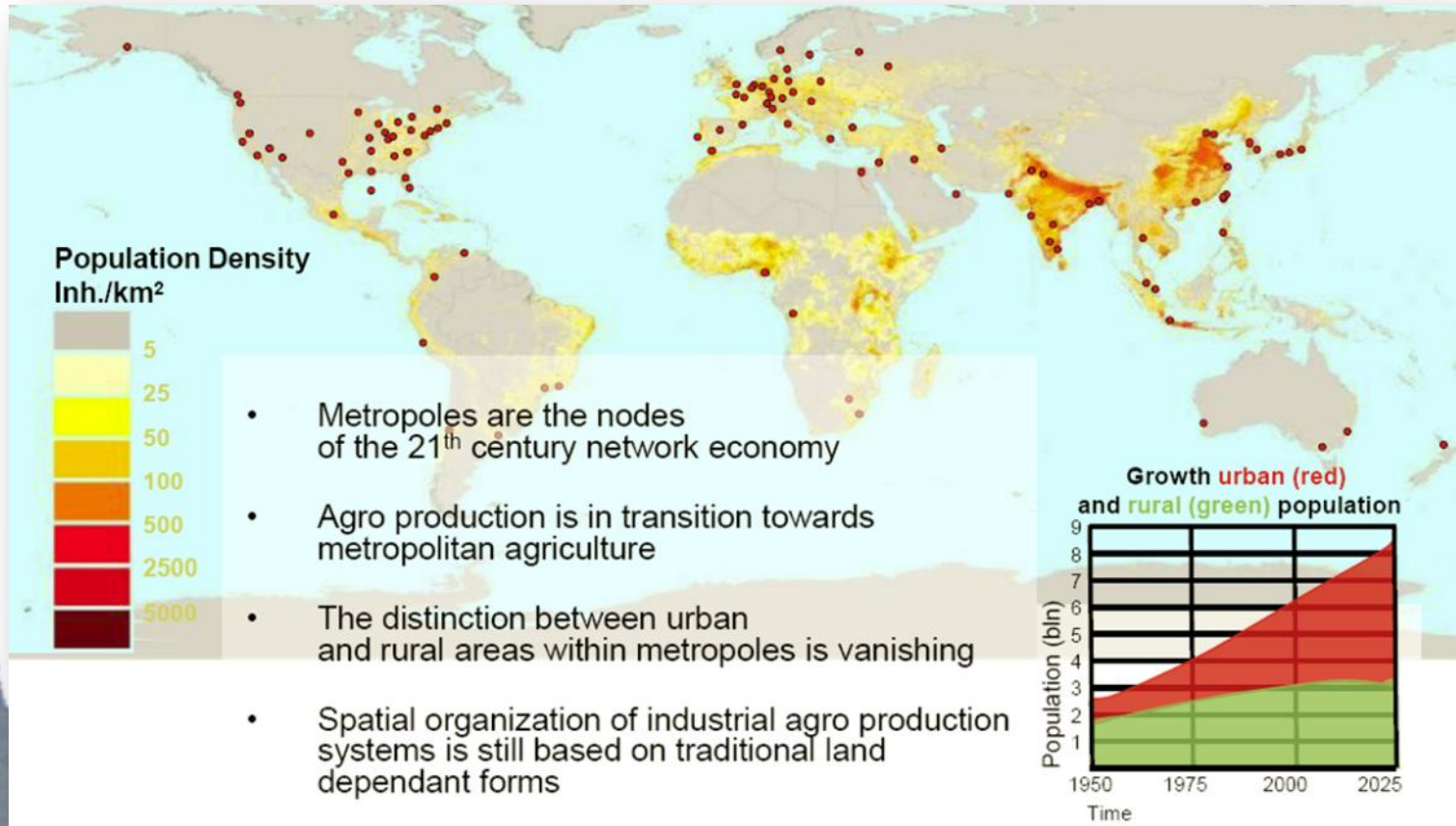
Withdrawal as a % of total



*(Source: WMO, 1996; GEO, 2000; UNEP, 1999)*

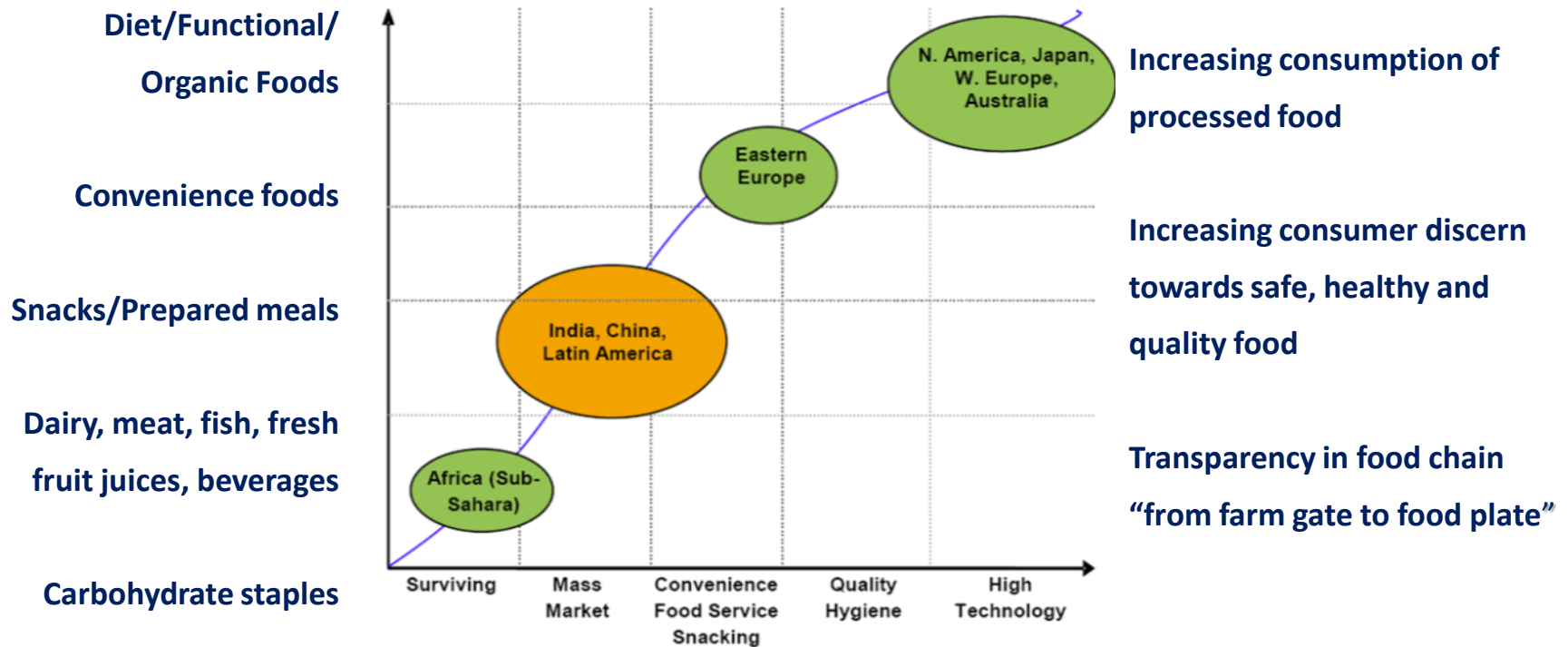


# The world is urbanizing



# 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

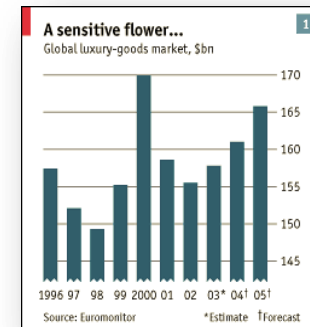
*Fodder, food crops, vegetables, fruits*

### Fashion

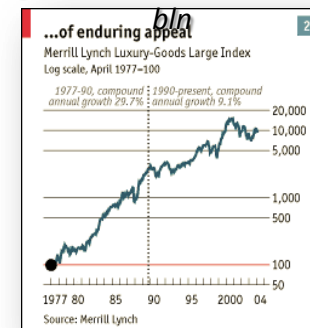
*Flowers, flavors, fragrances*

### Pharmaceuticals

*Functional foods, pharmaceuticals*



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



Which is a 100-fold increase between 1977 and 2005

# 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



# 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



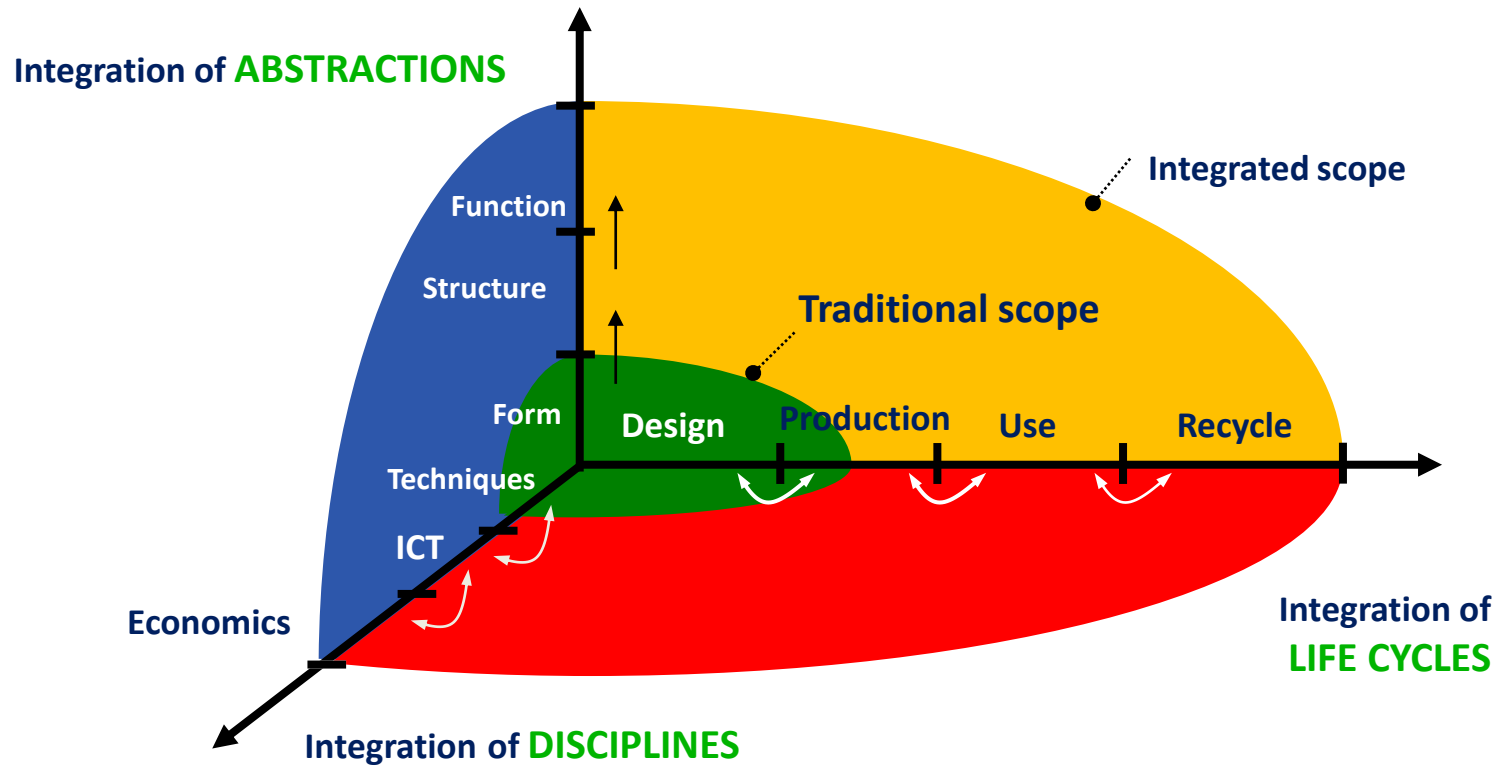
## Increasing transparency

- Especially sharing knowledge
- Pressure on media, social media

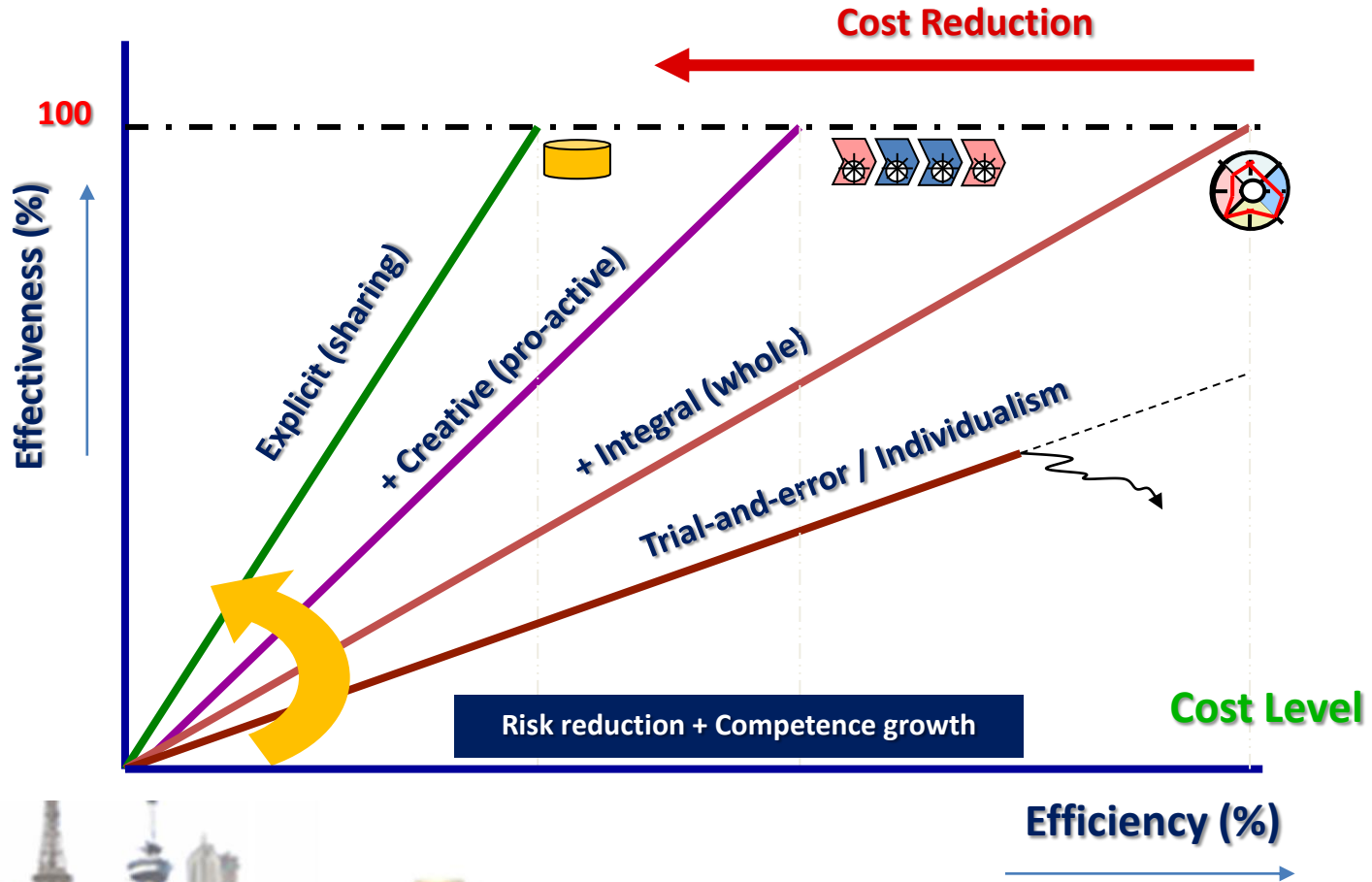




# Integrated approach to product and process development



# Result Level



**Market**



**Pressure**

**Requirements**

**Purchasing power of retailers**  
**Very short lead times**  
**High service levels**  
**7 day supply**  
**Quality / food standards**  
**Competition**

**Increased use of EDI**  
**Support wide range of products**  
**Shorter shelf life products**  
**Reduction in use of stabilizers / additives**  
**Product traceability**

**Manufacturing**



**Pressure**

**Requirements**

**Integrated systems structure**  
**Variable batch sizes**  
**Effluent / waste reduction**  
**Lowest cost production**  
**Just in time operation**

**Forecasts of requirements**  
**Reduced dependency on people**  
**Plant flexibility**  
**High speed changeovers**  
**Scheduling production and maintenance**  
**Product recovery systems**  
**Detailed records of production**

# Orange Project

together with GMV and Agentschap NL (EVD)

**GMV**

  
**ORANGEPOTATO**

## 荷兰小土豆大产业



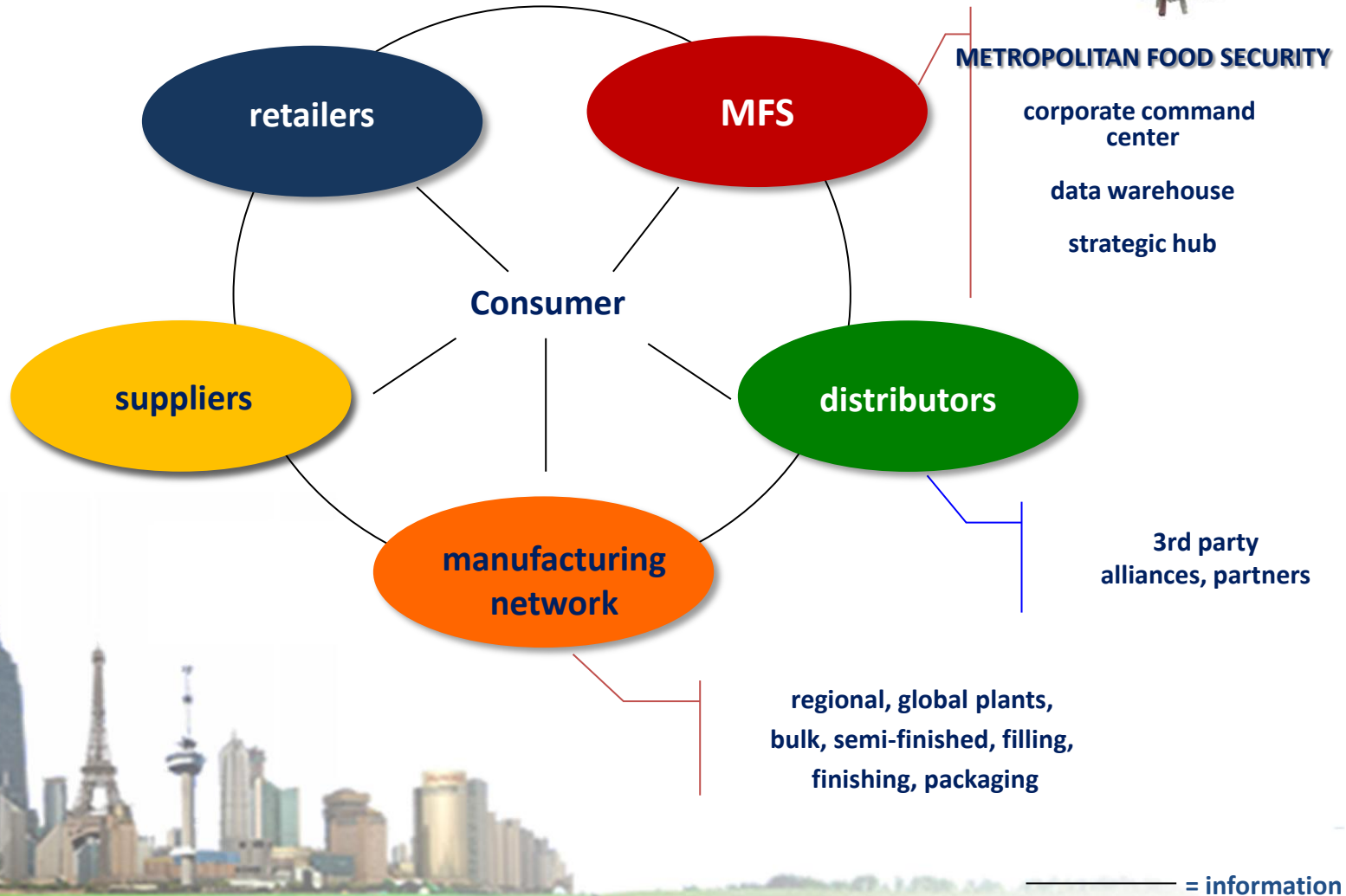
  
**ORANGEPOTATO**

**GMV**

## 荷兰小土豆大产业



# Future food supply system





WAGENINGEN UR  
*For quality of life*



## Vision on Metropolitan Food Security

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



# Thank You !



## 7 P's for Success:

1. People
2. Professionals
3. Plan
4. Pro-active
5. Performance
6. Planet
7. Prosperity

More information?  
[www.metropolitanfoodsupply.nl](http://www.metropolitanfoodsupply.nl)