Convención Internacional de Envases y Embalajes para Alimentos
20 Setiembre 2012 - Lima, Perú

Tecnología y tendencia en el empaque de alimentos para la Unión Europea

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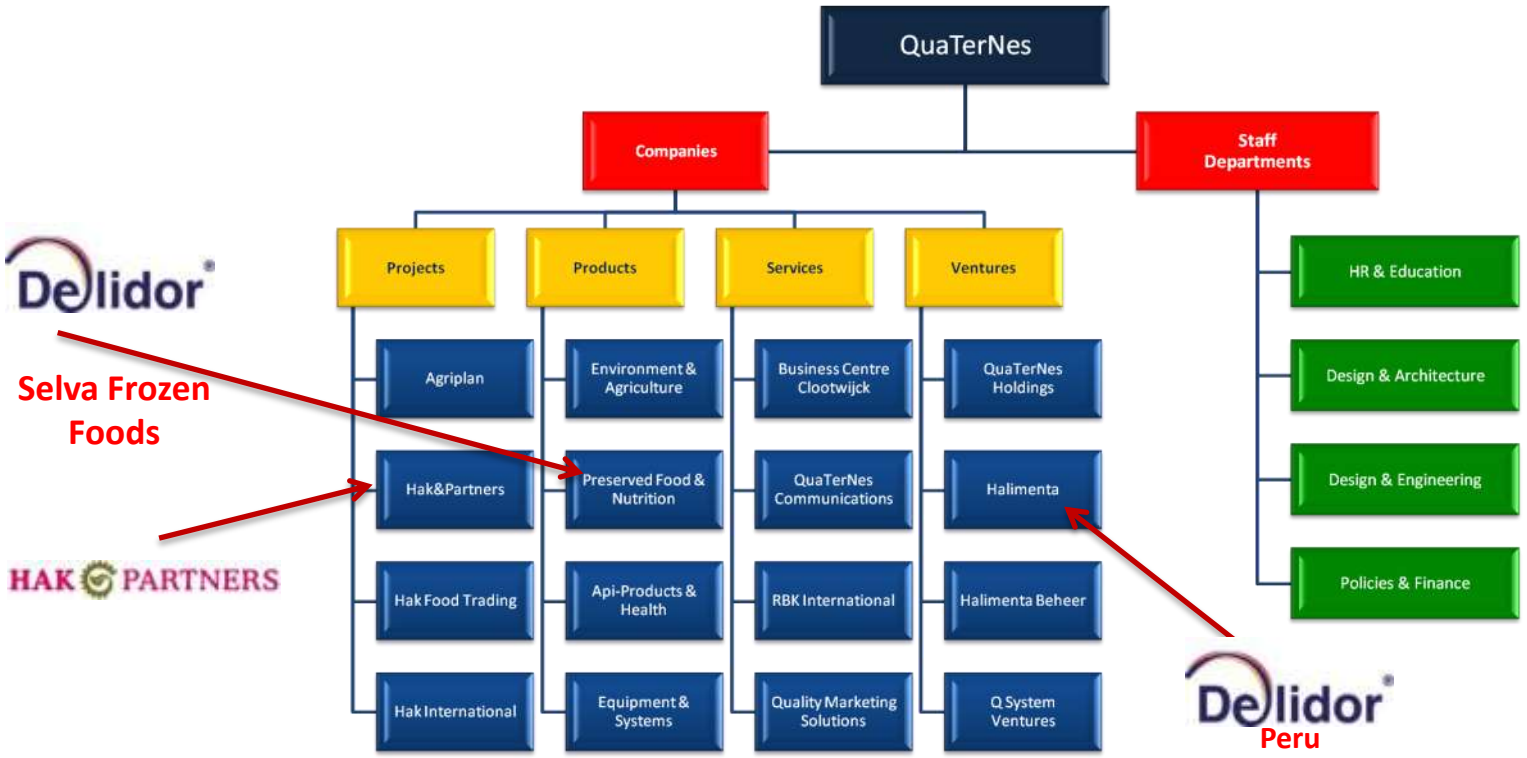
QuaTerNes Group

QuaTerNes



Dutch Association of Manufacturers of Food Processing, Packaging and Bio-Based Systems

Members cover a high percentage of total machinery production in all sectors of the industry: fruit, vegetables, feed, meat, fish, dairy, bio-based products, etc.

Member of:

- **FPME (Food Processing Machinery Europe)**
- **Europama (European Committee of the National Associations of Packaging Machinery Manufacturers)**
- **Copama (International Confederation of Packaging Machinery Associations)**

GMV

The Netherlands: 'Food Technology Valley'

Home country of world leading companies in food technology

Turn-over 2011: EUR 3,5 billion in food processing and packaging systems research of which 42% outside the EU

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

STORK®
Kiremko
GMF GOUDA
Tanis Confectionery
Kaak
Haton
Dough Friendly Company
NORIT®
HAK PARTNERS
Rademaker

Metropolitan Food Security

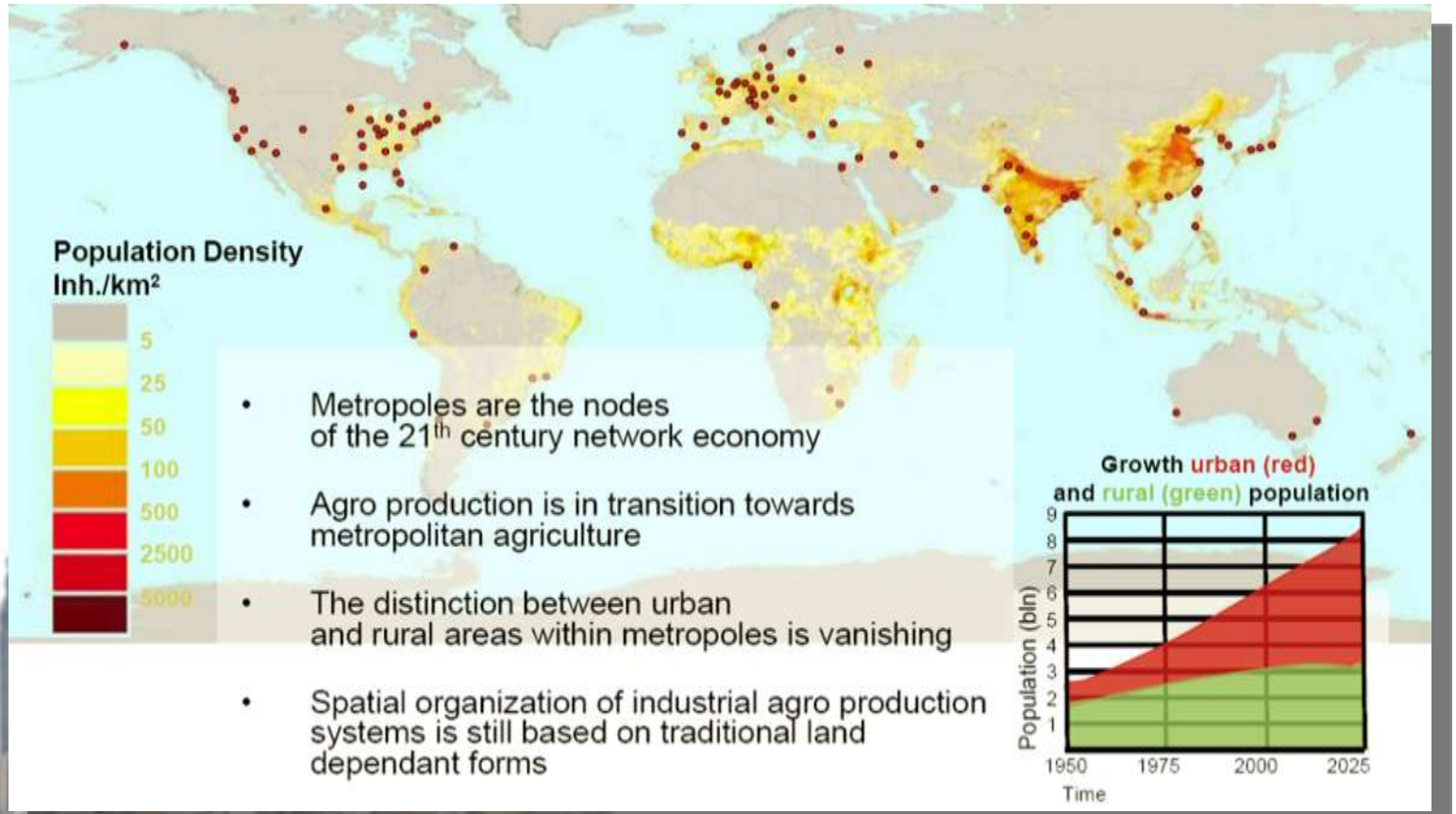
Twice as Much Food, Twice the Quality, Half the Resources

Platform for sectors:
Water - Agri-Food - Horticulture (T + U)

Market driven, result oriented initiative

- **With:** **Holistic approach on Consumer Acceptance**
- **Involving:** **Logistics, Cleantech, Pharma and Bio-based Products**
- **Enabled by:** **ICT and Hi-Tech**

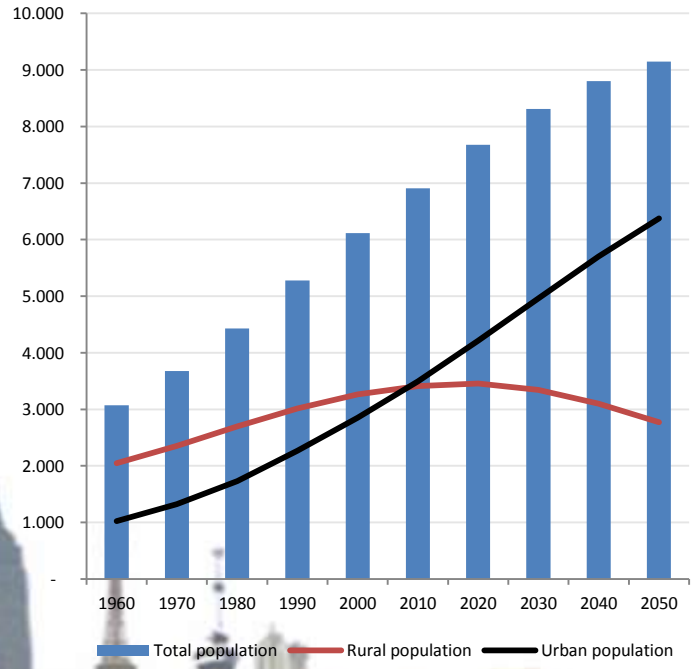
The World is globalizing



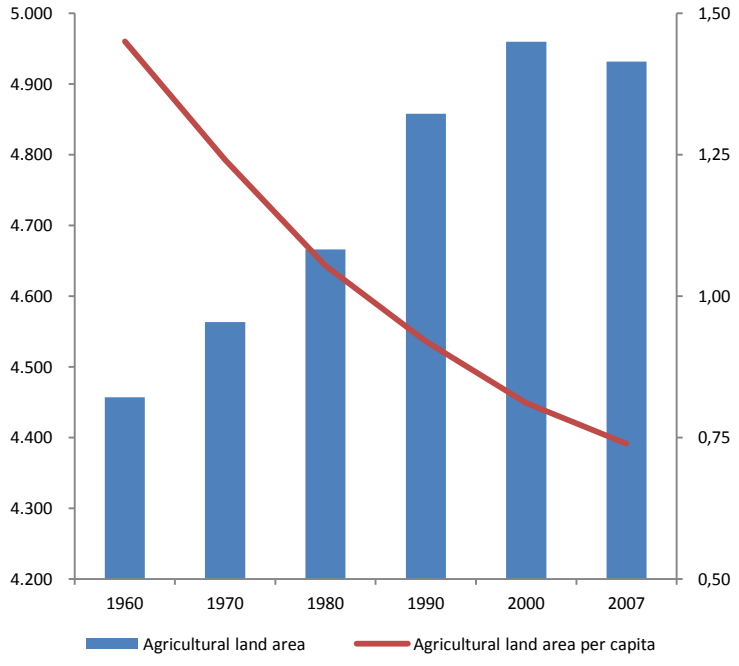
Metropolitan Food Security

More people, Less land

Global population (in millions)



Agricultural land (1,000 ha)



Source: FAO Stat, Rabobank

Metropolitan Food Security

Economic growth (2010-2025) for 75% comes from emerging economies
Economic growth (2010-2025) comes for 82% of large cities

Source: MC Kinsey Global Institute, June 2012

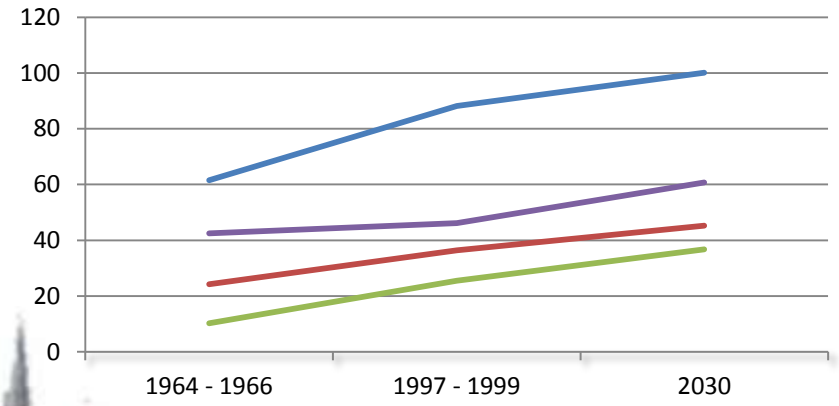
The Most Dynamic Cities of 2025

			Population (millions)		GDP (billions of U.S. dollars)			
Rank	City	Country	2010	2025	2010	2025	Total Growth	% Growth
1	Shanghai	China	22.3	30.9	250.7	1,112.2	861.5	344
2	Beijing	China	18.8	29.6	206.2	1,027.9	821.7	398
3	Tianjin	China	11.1	15.2	128.8	624.4	495.7	385
4	São Paulo	Brazil	19.7	23.2	437.3	912.9	475.7	109
5	Guangzhou	China	11.1	14.9	146.1	573.0	426.9	292
66	**Lima**	**Peru**	**9.2**	**11.8**	**77.3**	**184.7**	**107.3**	**139**

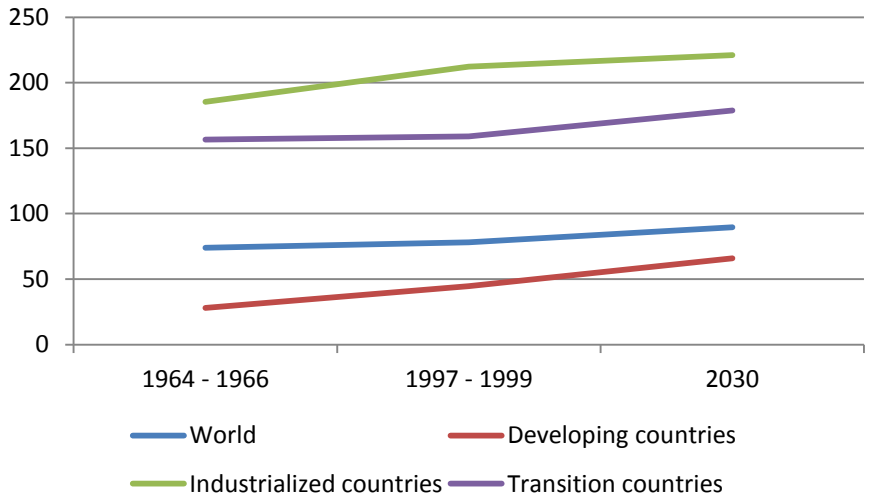
Ranked by projected absolute GDP growth 2012-2025 at predicted real exchange rates.
Source: McKinsey Global Institute Cityscope

Changing Consumption

Per capita meat consumption (kg/year)



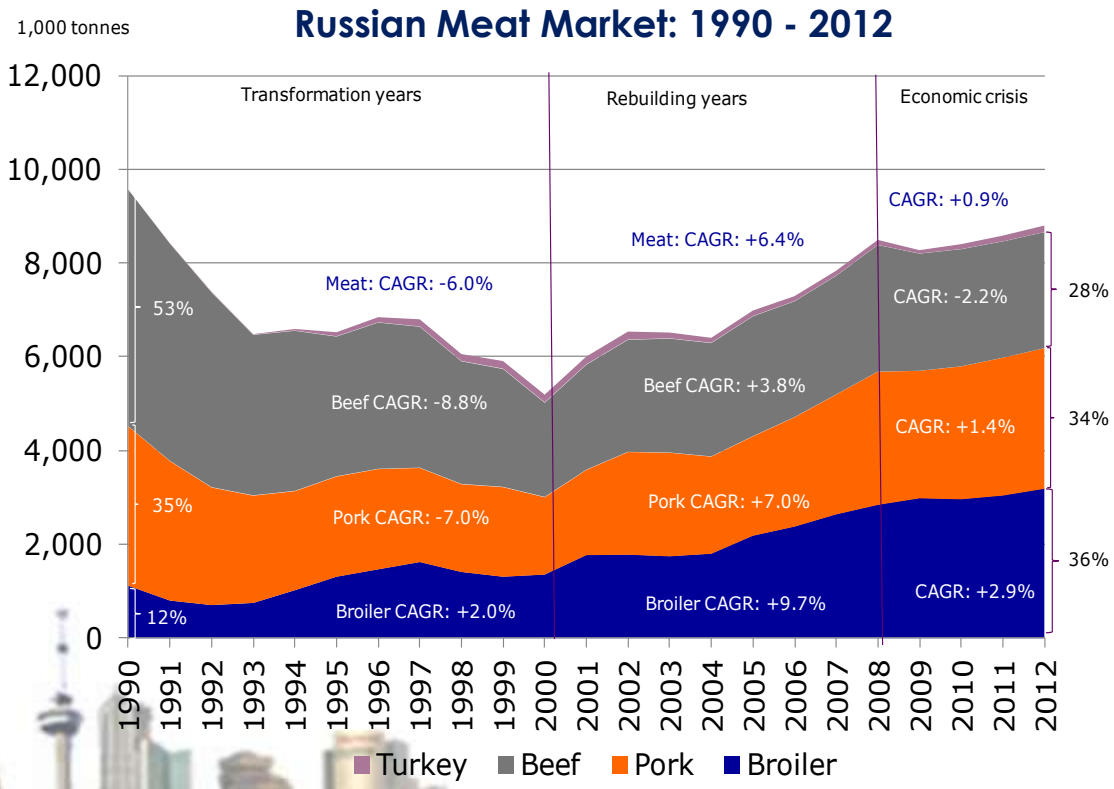
Per capita milk consumption (kg/year)



Source: World Health Organization

Metropolitan Food Security

Growing meat demand, move to poultry



Rabobank

Metropolitan Food Security

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

Trends in European 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

Trends in European 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

Market/Chain

Pressure

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

Requirements

- Increased use of EDI
- Support wide range of products
- Shorter shelf life products
- Reduction in additives
- Bio & Green
- Product traceability

Operations/Packaging

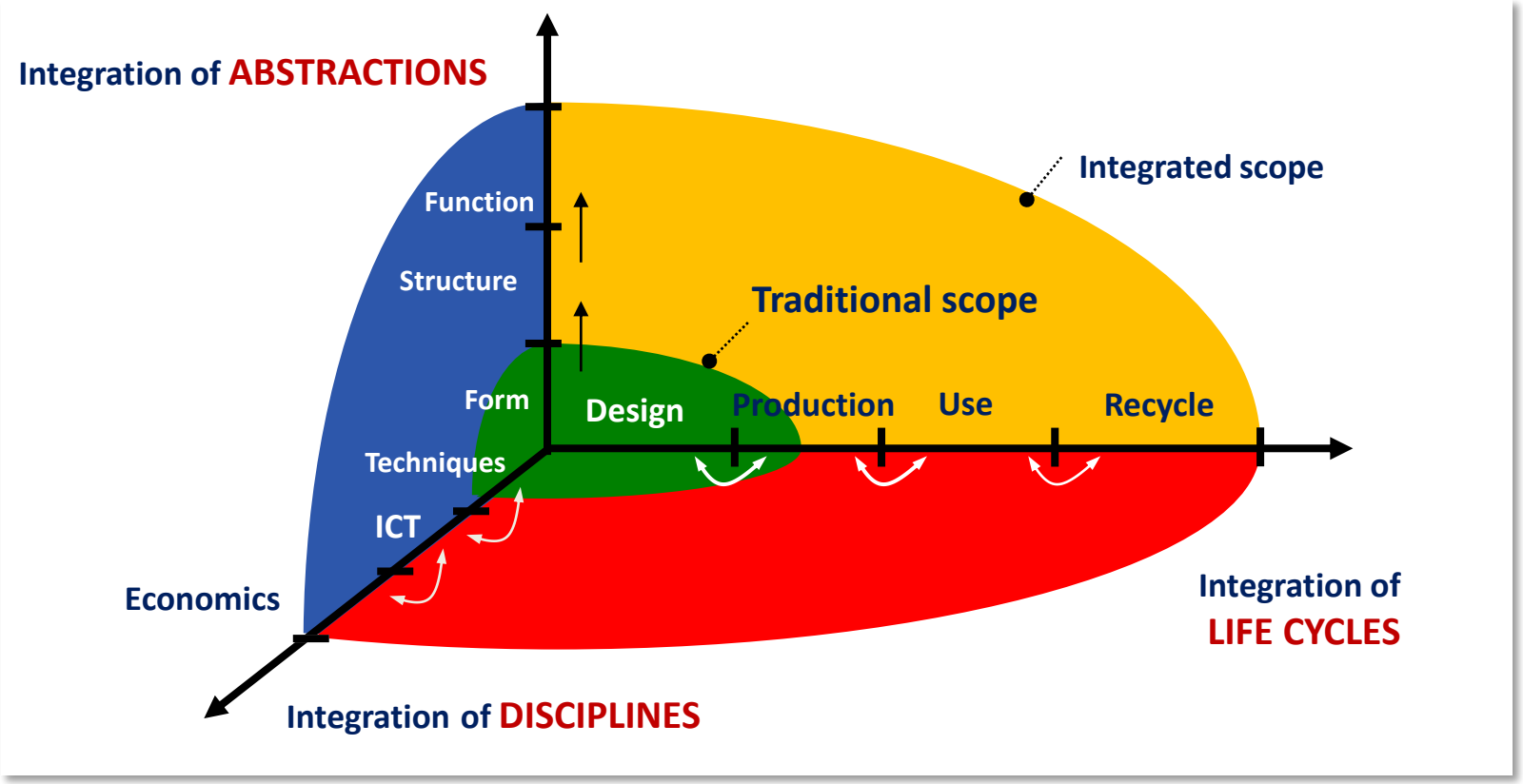
Pressure

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

Requirements

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

Integrated approach to product, process and packaging development



Indispensable Benefits of Food Packaging

- Protection
- Freshness
- Sensory appeal
- Portability
- Convenience
- Differentiation
- Performance
- Time saving
- Channel growth
- Communication
- Relevance
- Esteem
- Equity enhancement

Key trends enabled by packaging:

- Nutrition / Health
- Flavor
- Convenience
- Value
- Variety
- Fun
- Time
- Affordable luxury
- Security and Authenticity
- Quality
- Sustainability and Environment

Examples from the potato value chain:

Create more added value

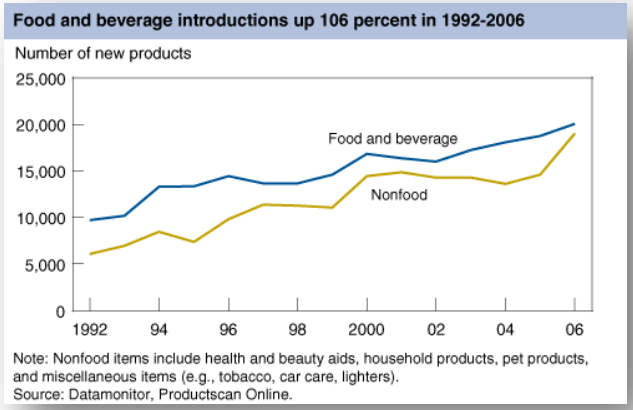
- **Healthier, convenience**

Distinguish yourself

- **More variations (functional, organic, exceptional)**
- **Competition (new packaging ideas, developments on shop floor)**

Reach new customers

- **Consumer groups**



Health and Nutrition

Less fat and calories

- **French fries**
  Smaller portions, focus on preparation other than frying, new frying technologies

- **Potato chips**
  Smaller packages, baked, reduced in fat, light

Health and Nutrition

Sodium and Acrylamide

- **Sodium**
  Less, offer sachets

- **Acrylamide**
  Lighter fries, changes in frying process, less potato ingredients (extruded snacks), enzymes

Energy and Environment

- Supply chain integration
- Low carbon footprint
- Local sourcing of Potatoes
- “Controlled” potato cultivation
- Reduction in use of pesticides
- Organic potato products
- New varieties (resistance)

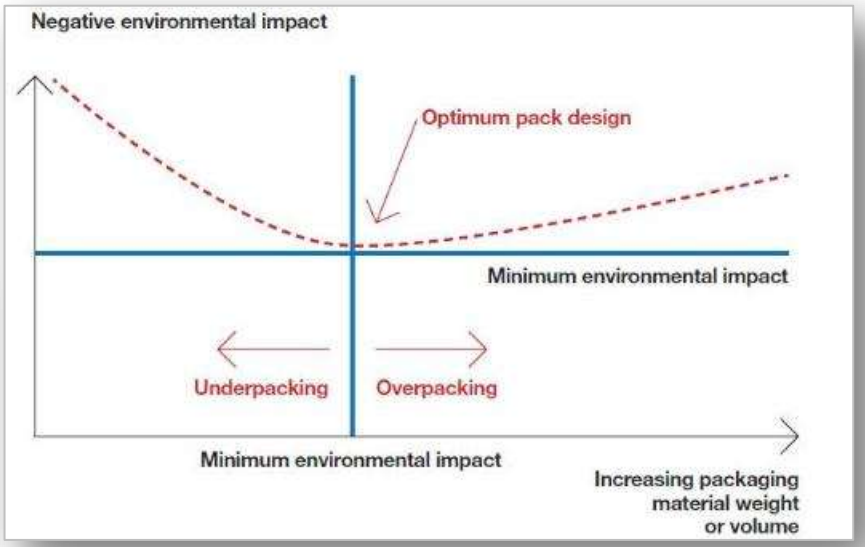
Trends to watch

1. **Functionality and Sustainability** — Finding the balance
2. **Sustainable Packaging** — Focus on recyclability
3. **Paper-based Packaging** — Keep the Molecule in Play
4. **Stand-up Pouches** — Maximum Flexibility, Sustainability and Convenience
5. **The Development of Bio-plastics** — A viable eco-friendly solution?

1. Functionality and Sustainability

***Aim**: Finding the balance between under-packaging and over-packaging*

- **Packaging prevents food waste**
- **Saves resources**
- **Part of solution for an overall resource efficient society**
- **Facilitating sustainable lifestyles**



2. Sustainable Packaging

- Concern about personal impact on environment
- Demand for "green" packaging":
  - ✓ recycled content
  - ✓ re-usable
  - ✓ degradable

3. Paper-based Packaging

Wax is out

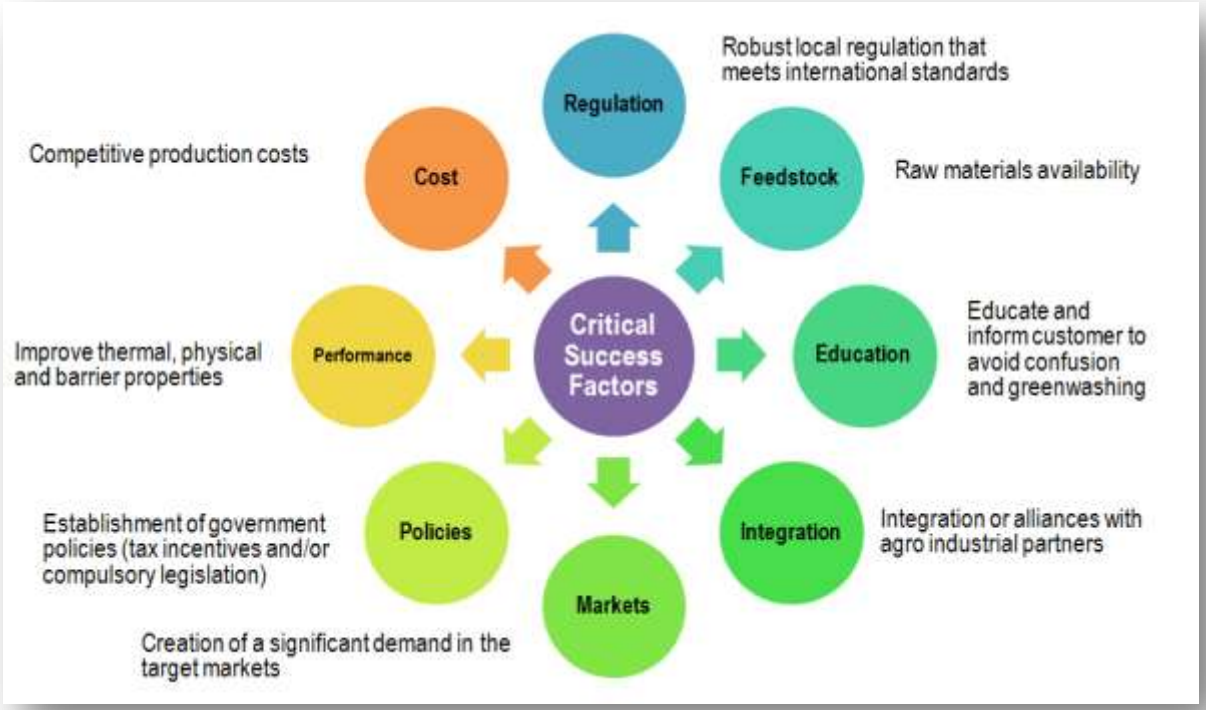
- **Wax replacement packaging**
- **Water based technologies**
- **Reducing landfill costs, boasting recycling levels**

4. Stand-up Pouches

Maximum Flexibility, Sustainability and Convenience

- **Replacing ridged containers**
- **Reducing landfill costs, boasting recycling levels**

5. The Development of Bio-plastics - *What's in the name?*



Distinction between: Bio-based, compostable, biodegradable, etc.

Final Remarks:

1. **Freshness**
2. **New Technologies**

1. Freshness

- Packaging differentiation by "Green" aspects
- Innovator: Best practices in fresh produce
- Freshness Phobia
- (Organic) Freshness
- Intelligent and active packaging

2. New Technologies

- **Pulse Electric Field (PEF)**
  For liquid products like juice, milk, soup
  High voltage pulses, lengthens storage life

- **High Pressure Conservation**
  Ultra High Pressure (UHP)
  For products that has to be sterilized or pasteurized
  Pressure up to 1,000 MPa
  Disables micro-organisms and enzymes

- **Cold Plasma**
  Cold gases with electrical charge disinfect
  the surface of packaging

NAFTC

Netherlands Agro Food Technology Centre

Netherlands Agro & Food Technology Center, South America

Goals

- Peru – Dutch Cooperation Business and Academia
- Create New Business Opportunities and Stimulating Entrepreneurship
- Jointly Securing Food for Urbanized Areas
- Spin-off: Effects in Innovations in Science, Technology, Education, Training and Know-how Transfer

Metropolitan Food Security

Strategy to Success - 7 P's:

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

Gracias!

Más información: www.quaternes.nl