

# Dutch Hi-Tech Agri-Food Systems



**Jan Hak, President**

**President GMV / FME, CEO QuaTerNes**

**Vice President, Head Emerging Markets MetropolitanFood Security**

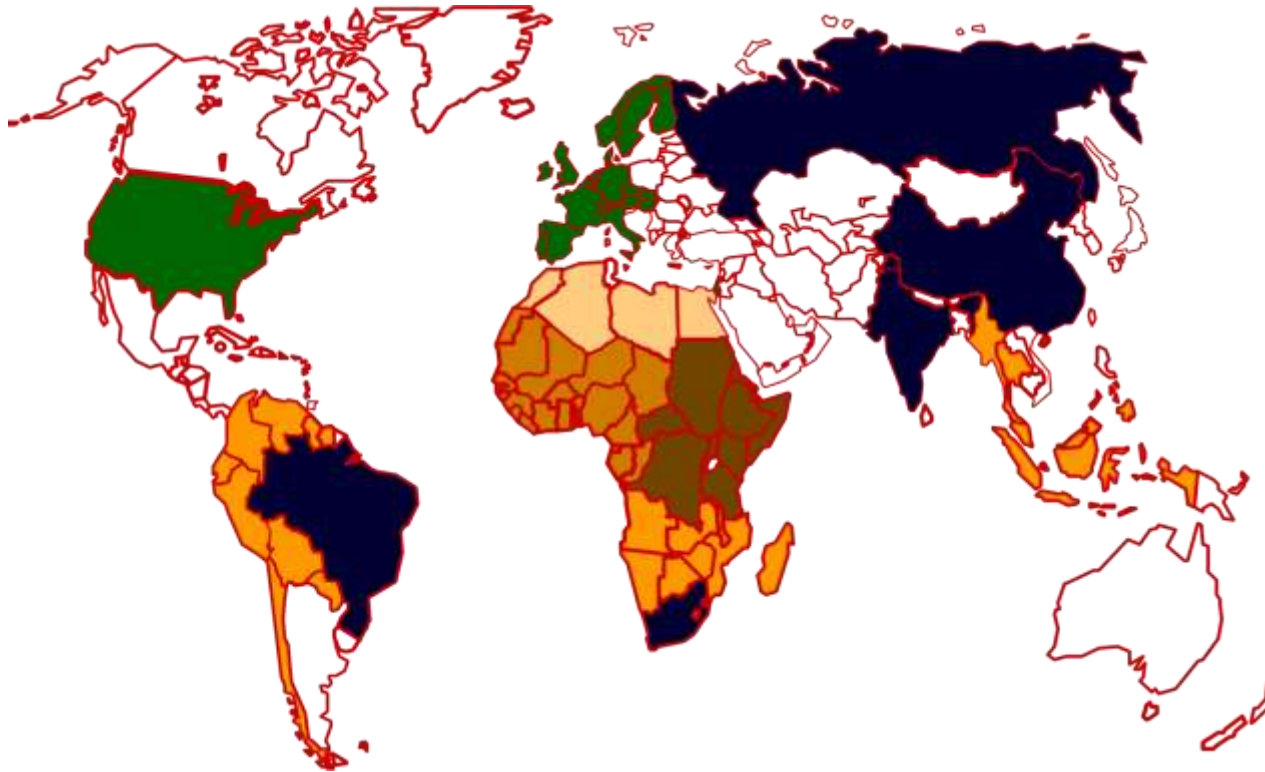
**Agri, Dairy & Food Processing Seminar - Gujarat State, 12 January 2013**



# NAFTC



## NAFTC worldwide supported by GMV and MFS



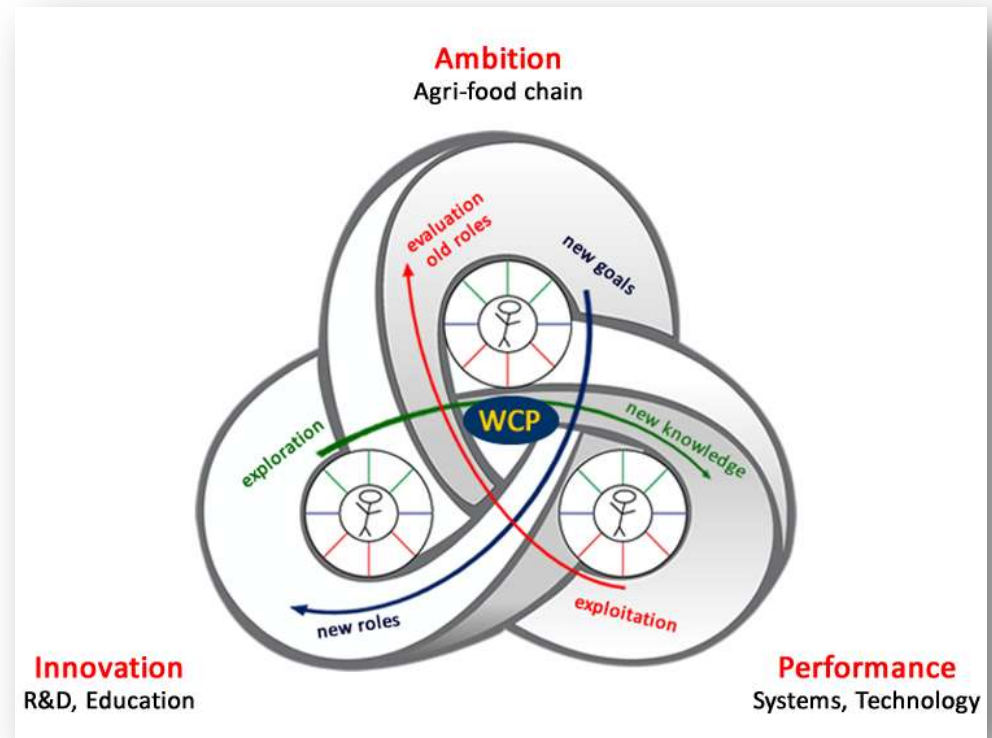
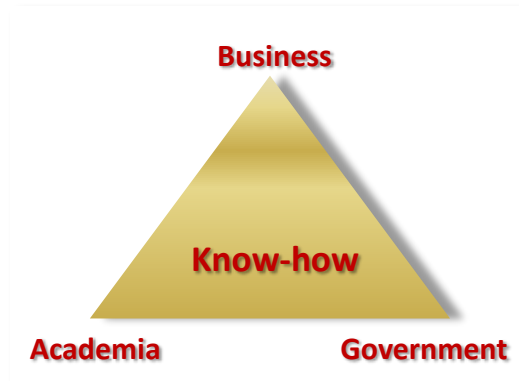
### Markets:

- **Emerging:** Brazil, Russia, India, China, Southern Africa
- **Frontier:** Northern, Eastern, Western Africa, South East Asia, South America
- **Innovative:** Western Europe, USA, Israel



## What we do:

- Supporting and facilitating sustainable developments in agriculture and food
- Supporting our members and partners world wide
- Cooperation in Dutch Golden Triangle





## How we do what we do:

- Create sustainable entities with partners
- Support market oriented agri-food chains
- Improve values for stakeholders
  
- Partner in think-tanks and platforms:
  - ✓ GMV - FME
  - ✓ Metropolitan Food Security (MFS)





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**GMV**  
Facilitating Food

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

Facilitating food:

Fruits, vegetables, feed, meat, fish, dairy and bio-based products

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)





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## The Netherlands: 'High Tech in Agriculture, Food, Horticulture and Water'

World leading Technology Companies

Turn-over 2012: EUR 11,4 billion in high tech systems, 42% outside the EU

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





## The Netherlands: 'Food Valley'

World leading Food Companies

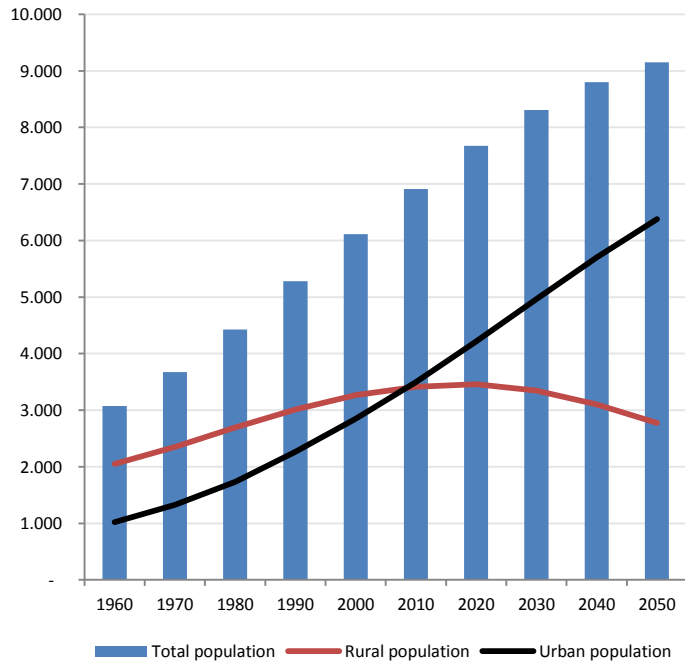
Turnover 2011: EUR 70 billion in agri-food products;  
Staff 2011: 10% of labour force is dedicated to the Agro & Food Section  
*(2<sup>nd</sup> Largest world exporter)*



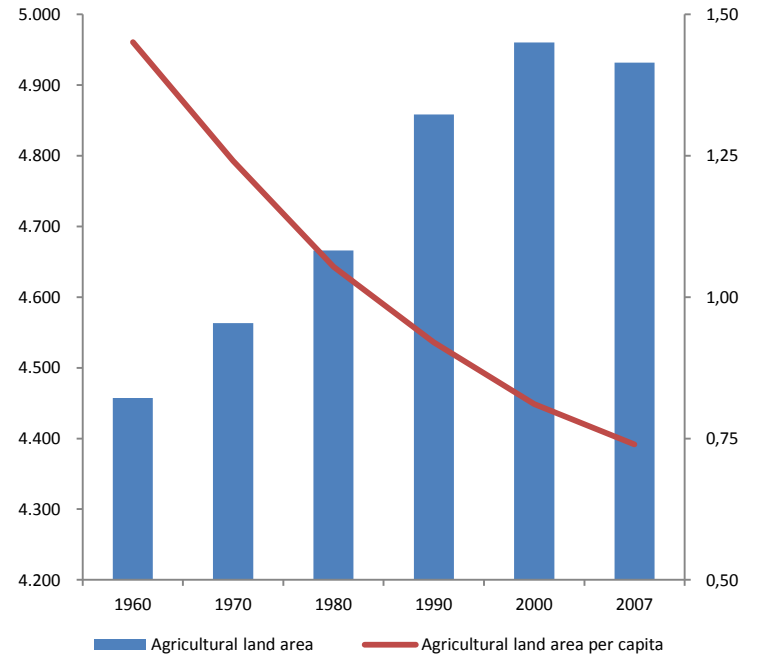


## More people, Less land

Global population (in millions)



Agricultural land (1,000 ha)



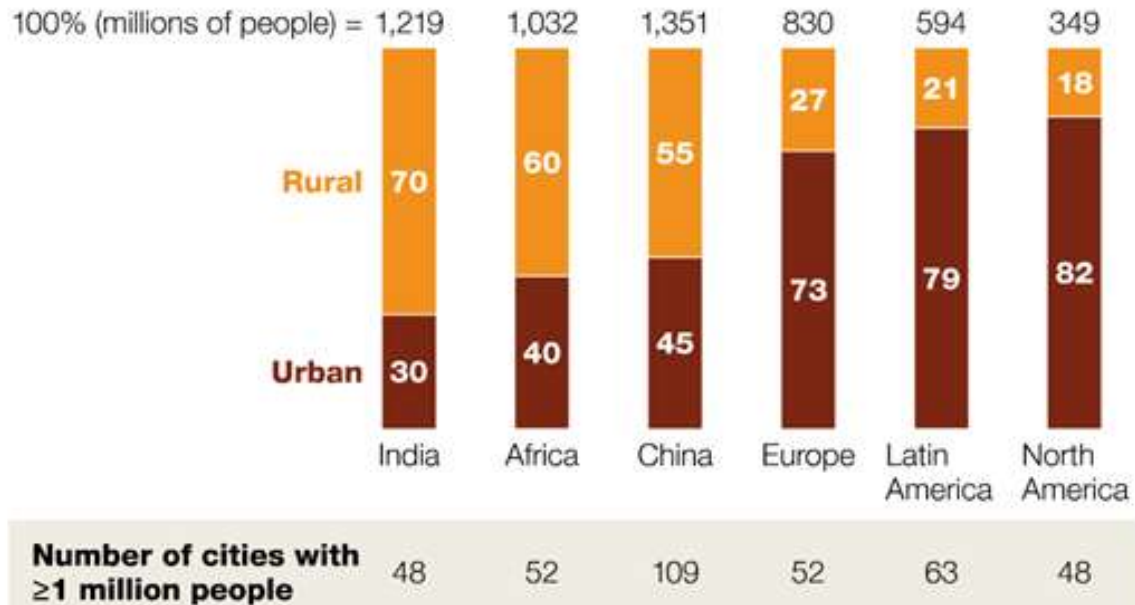




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Share of population by region, 2010, %



Source: United Nations; McKinsey Global Institute analysis

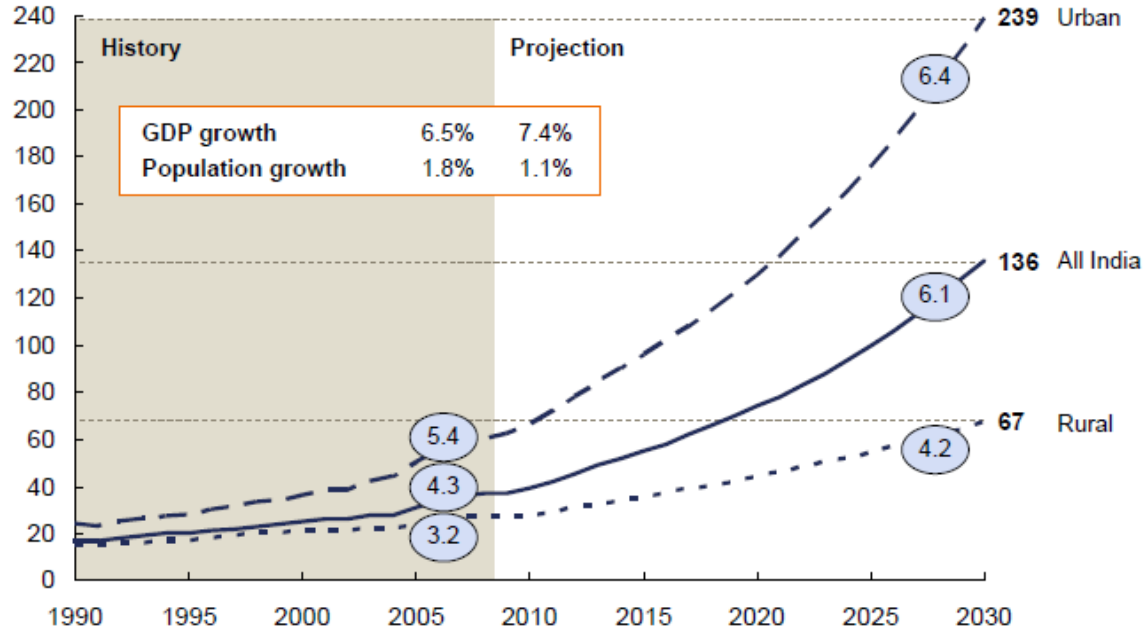


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## Urban India will drive a near fourfold increase in average national income

Per capita disposable income  
Rupees thousand, real 2008



SOURCE: India Urbanization Econometric Model; McKinsey Global Institute analysis



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## Five states are likely to be more than 50 percent urbanized

State	Urbanization rate, 2008 %, total population	Urban population Million	Urbanization rate, 2030 %, total population	Urban population Million
Tamil Nadu	53	35.4	67	53.4
Gujarat	44	25.2	66	48.0
Maharashtra	44	47.9	58	78.1
Karnataka	37	21.6	57	39.6
Punjab	36	10.0	52	19.0
Haryana	31	7.5	45	15.2
West Bengal	29	25.8	40	41.5
Kerala	28	9.7	41	15.8
Andhra Pradesh	28	23.4	46	45.5
Madhya Pradesh	25	17.2	32	29.9
Jharkhand	25	7.6	31	12.0
Rajasthan	24	15.5	33	29.5
Chhattisgarh	24	5.8	40	11.7
Uttar Pradesh	21	39.2	26	68.9
Orissa	18	7.0	24	11.0
Himachal Pradesh	12	0.8	20	1.8
Bihar	9	8.9	17	21.3

SOURCE: India Urbanization Econometric Model; McKinsey Global Institute analysis



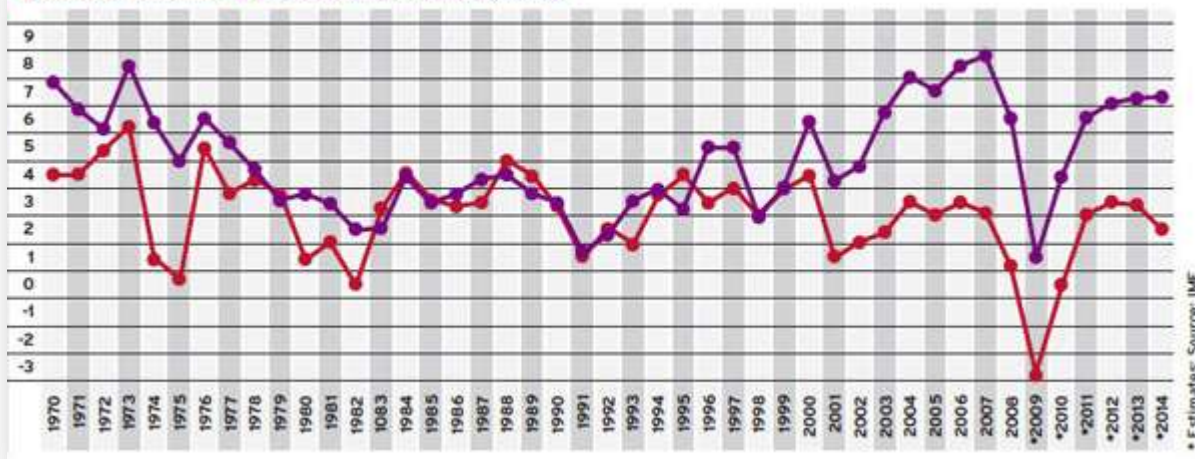


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## REAL GDP GROWTH (% PER YEAR)

● Advanced economies ● Emerging and developing economies

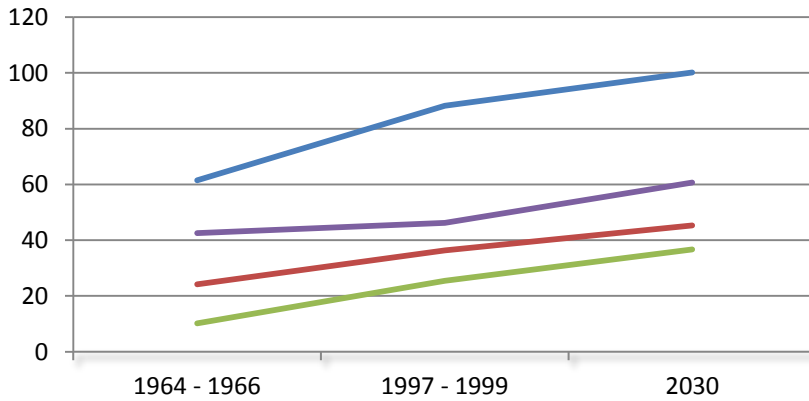


World GDP growth						
% change on previous year						
	2010	2011	2012	2013	2014	2015
<b>World GDP</b>	<b>4.6</b>	<b>3.7</b>	<b>3.4</b>	<b>4.5</b>	<b>4.7</b>	<b>4.5</b>
US	3.0	1.7	2.4	2.6	3.0	3.1
EU-27	1.8	1.6	0.0	1.3	1.9	2.5
Japan	4.1	-0.5	1.7	3.3	2.4	1.5
<b>Emerging Markets</b>	<b>7.1</b>	<b>6.0</b>	<b>5.3</b>	<b>6.5</b>	<b>6.5</b>	<b>6.1</b>
Asia Pacific	6.9	4.0	4.7	6.2	5.7	5.2
China	10.4	9.0	8.1	9.1	8.8	8.3
India	8.7	7.1	6.8	9.5	9.2	8.6

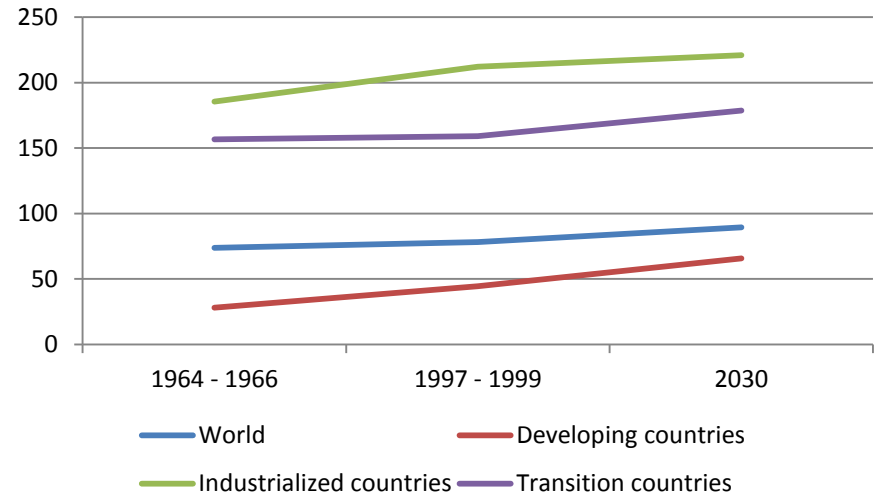


## Changing Consumption

**Per capita meat consumption  
(kg/year)**



**Per capita milk consumption  
(kg/year)**



Source: World Health Organization



## 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**

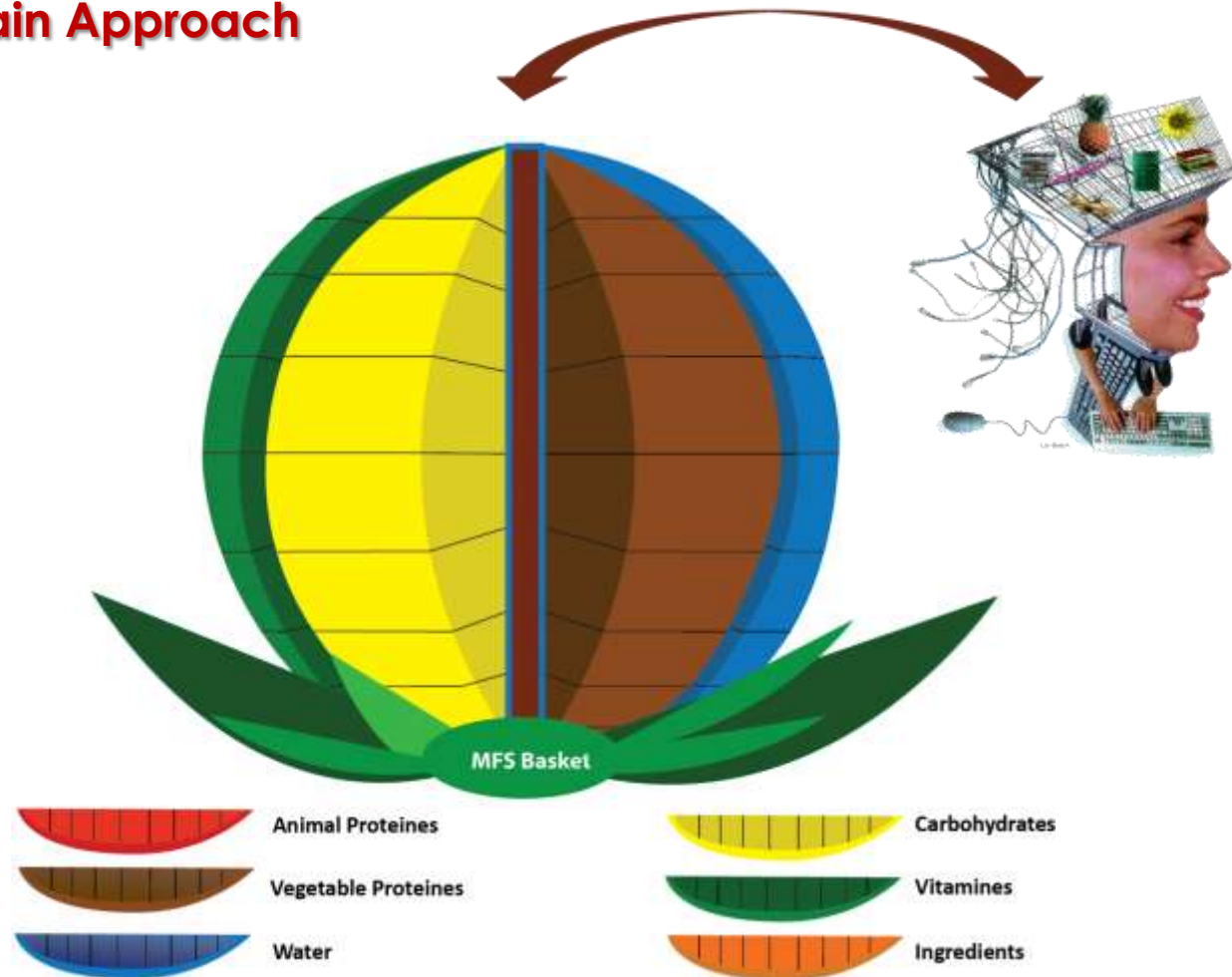




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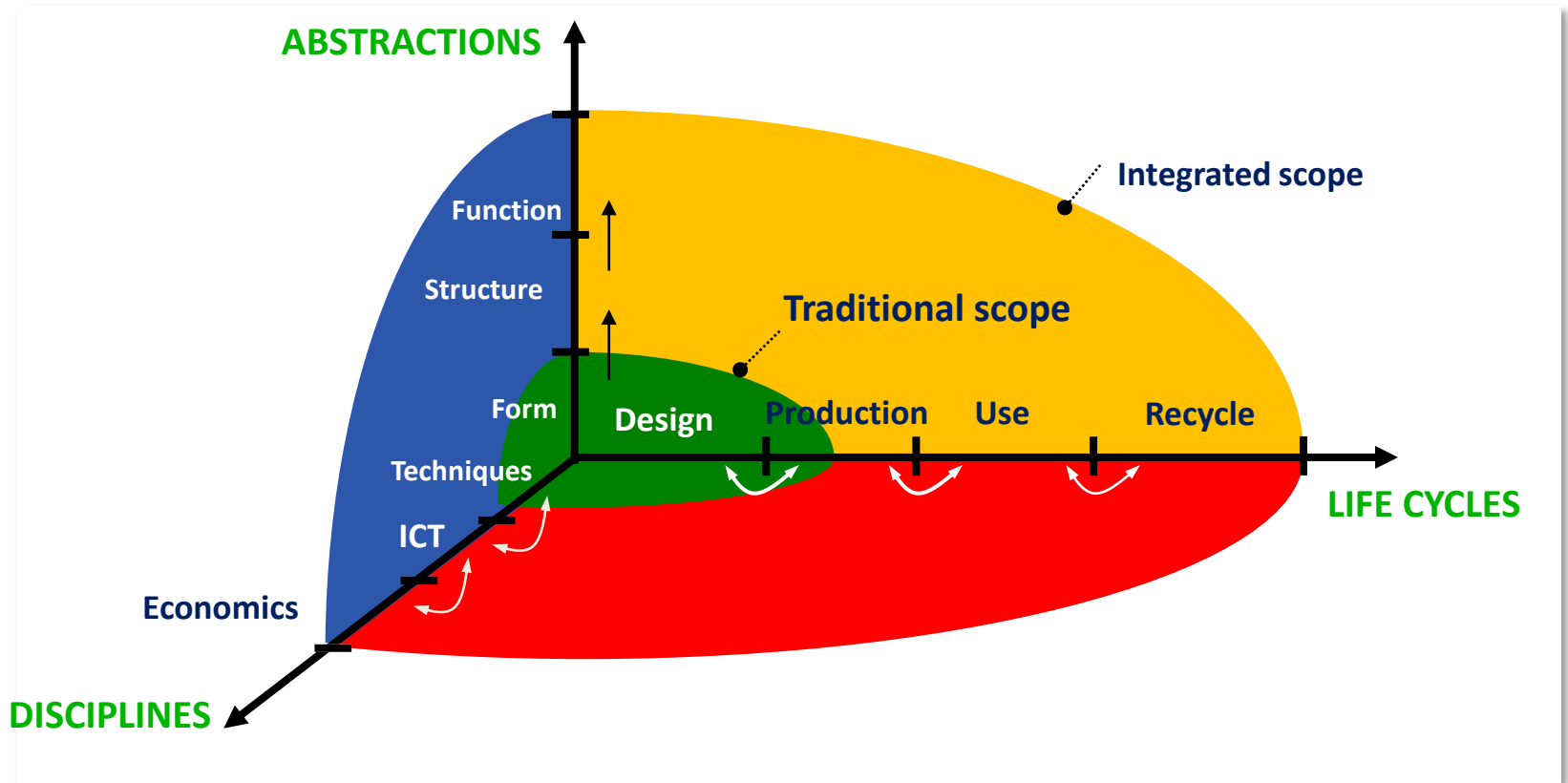


## Supply Chain Approach





## Integrated Approach of product and process development







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## Market/Chain

**Pressure**

- Purchasing power of Retailers and Food Service
- 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 and Emotion
- 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



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Hardware	Orgware	Software
Contextual relationships	Implementation and operation	Knowledge management
Infrastructure	Business planning	R&D
Demo facilities	Investment in infrastructure	Team development
Trade facilities	Types of consortia	Management of emotions
Production facilities	Stakeholder network	Communication
Processing facilities	External relations	Marketing
Industrial ecology	Policy and Politics	Branding
Energy management	Procedures and protocols	Quality management
Landscape and nature	Licences and approval	HRM
Routing	Supply chain management	Education
Design	Project management	Capacity building
<b>What can be held</b>	<b>What can be organised</b>	<b>What can be thought and felt</b>



## Strength – Weakness Matrix

<div style="background-color: #0070C0; color: white; padding: 5px;">Flow</div> <div style="background-color: #008000; color: white; padding: 5px;">Know-how</div>	Input	Production	Processing	Logistics	Trade	Consumer
Hardware						
Software						
Org. ware						

IN = India / NL = The Netherlands



## **Metropolitan Food Security**

### **Challenges:**

- **Water, genetics and primary sector development ("2x more, with 2x less")**
- **Hi-tech systems, remote sensing - crop management**
- **Post harvest handling, processing and logistics**
- **Integrated solutions for food security in rapidly growing urban areas**





## **Metropolitan Food Security**

### **Centers of Excellence:**

- **Private entrepreneurship:** Key to development and food security
- **Own experience:** Learning, building a sustainable knowledge base
- **Lead:** Private sector
- **Trust:** Power of Entrepreneurs
- **Concern:** Impact on small holders

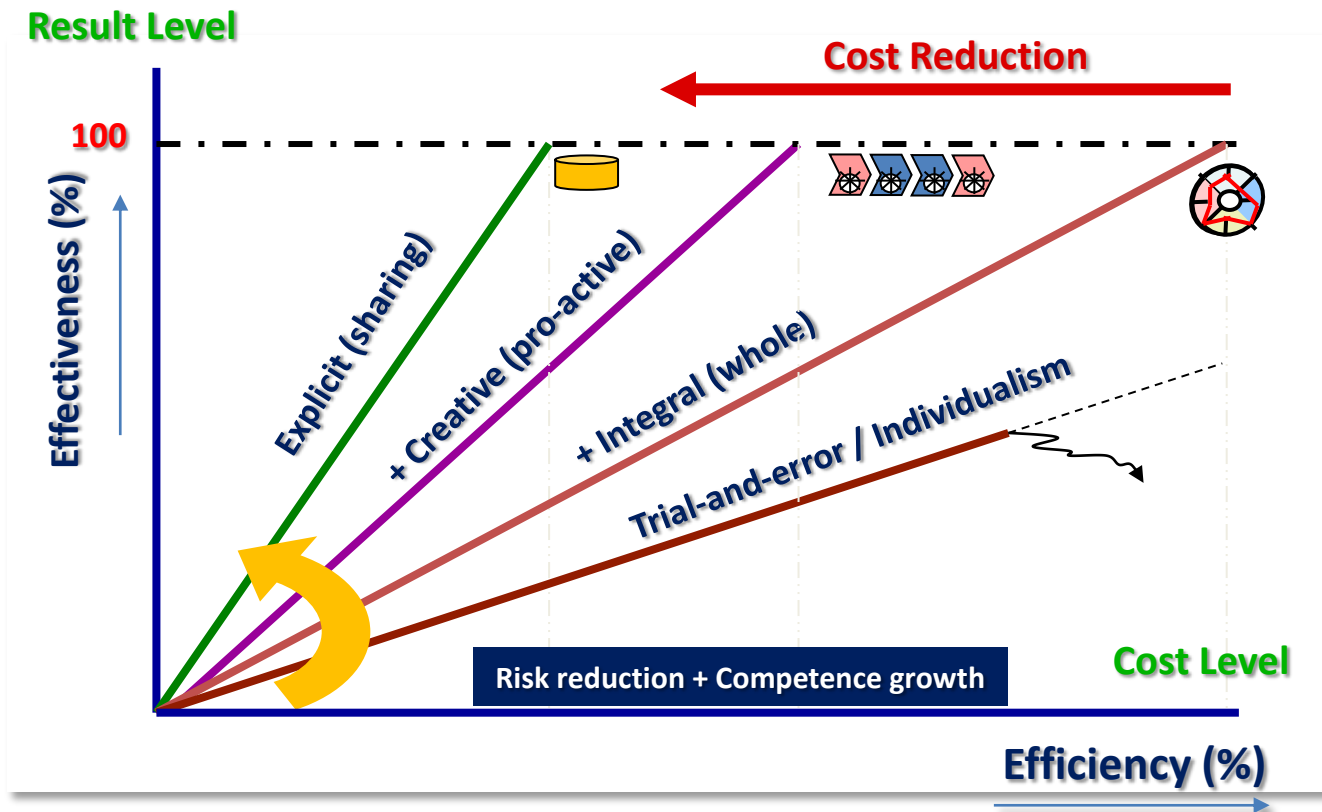




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## Result Orientation





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**MoU:**

**NAFTC Netherlands  
and Metropolitan Food Security**



**With:**

**Government Gujarat State**

**Supported by:**

**MFS and GMV/FME**





# Thank you!

**More information:**

[www.naftc-india.com](http://www.naftc-india.com)

[www.metropolitanfoodsecurity.nl](http://www.metropolitanfoodsecurity.nl)

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