QuaTerNes

‘Agribusiness Opportunities in Africa’

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NABC – EBCAM Exclusive Seminar

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Outline

1. Introduction
2. Experiences
3. Trends
4. Agro Hub Essentials
5. Brain Ports & Centers of Excellence
6. Conclusion & Questions

1. Introduction

QuaTerNes: Motto and Holding Structure

QuaTerNes

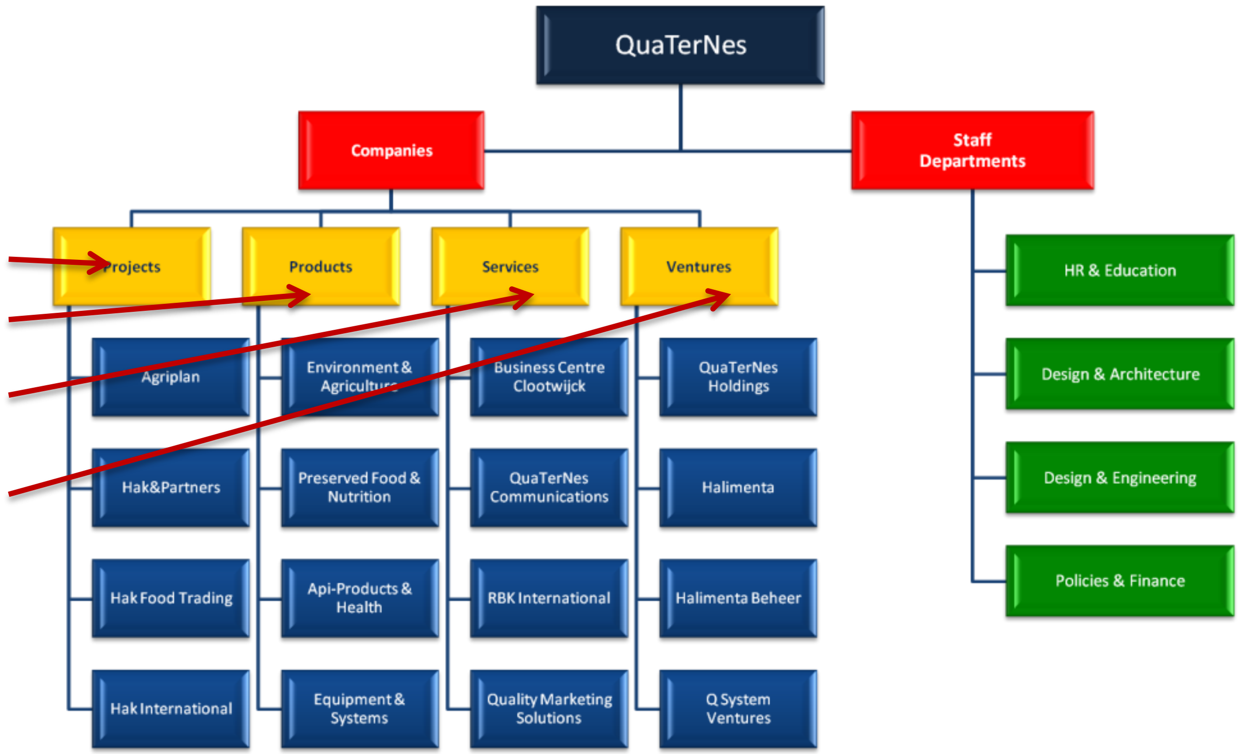
It's Great to be Allowed to Live Today !

Projects

Products

Services

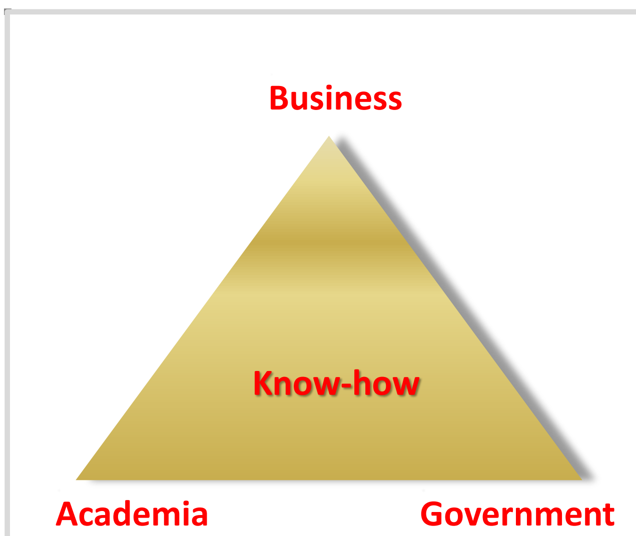
Ventures

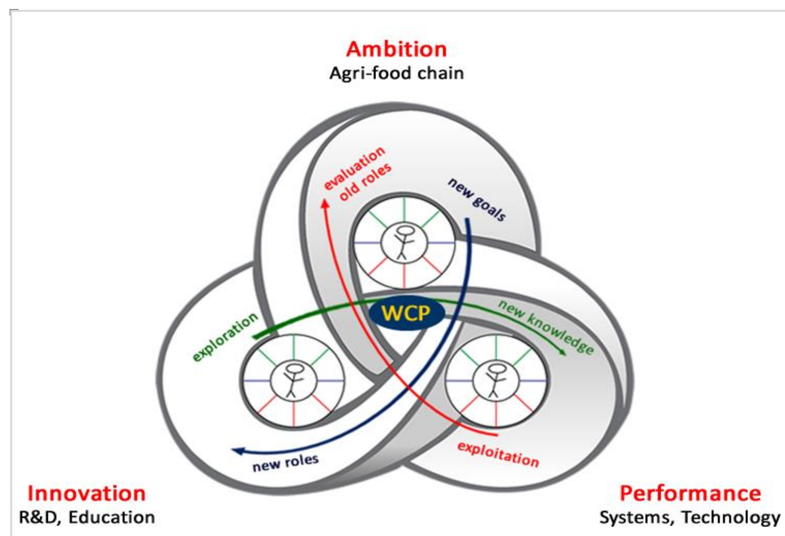


1. Introduction

QuaTerNes: Mission

- **Dutch Hi-Tech Agro, Food and Technology Products for sustainable developments in agriculture, aqua culture, horticulture, water and food**
- **Supporting our members and partners world wide**
- **Cooperation in Dutch Golden Triangle**





1. Introduction

QuaTerNes: Realisation

QuaTerNes

- **Create sustainable entities with partners**
- **Support market oriented agri-food chains**
- **Improve values for stakeholders**
- **Partner in think-tanks and platforms:**
  - ✓ Agro-Food Systems Manufacturers (GMV – FME)
  - ✓ Metropolitan Food Security (MFS)
  - ✓ Netherlands Agro, Food & Technology Centre (NAFTC)

GMV Facilitating Food

Metropolitan Food Security

NAFTC Netherlands Agro, Food & Technology Centre

1. Introduction
The Netherlands

High-Tech in Agriculture, Food, Horticulture and Water

World Leading Technology Companies

Turn-over 2012: EUR 13 billion in high tech systems, 42% outside the EU
(80% poultry, 70% cheese and > 50% potato processing systems)

Part of "Powered by Dutch Technology for Food, Health and Living Environment" (Program of FME-CWM)

Food Valley

Turnover 2011: EUR 70 billion in agri-food products;
Staff 2011: 10% of labour force is dedicated to the Agro & Food Section

(2nd Largest world exporter)

1. Introduction

GMV-FME, Dutch Association of manufacturers of food processing, packaging and bio-based systems

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GMV Facilitating Food

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)

Twice as Much Food   Twice the Quality   Half the Resources !

International Platform:

- Provision of input, know how and network access also locally by counterparts:
- Industries, Academia & Education system, Governments and Thematic organisations
- 3 Working Groups:

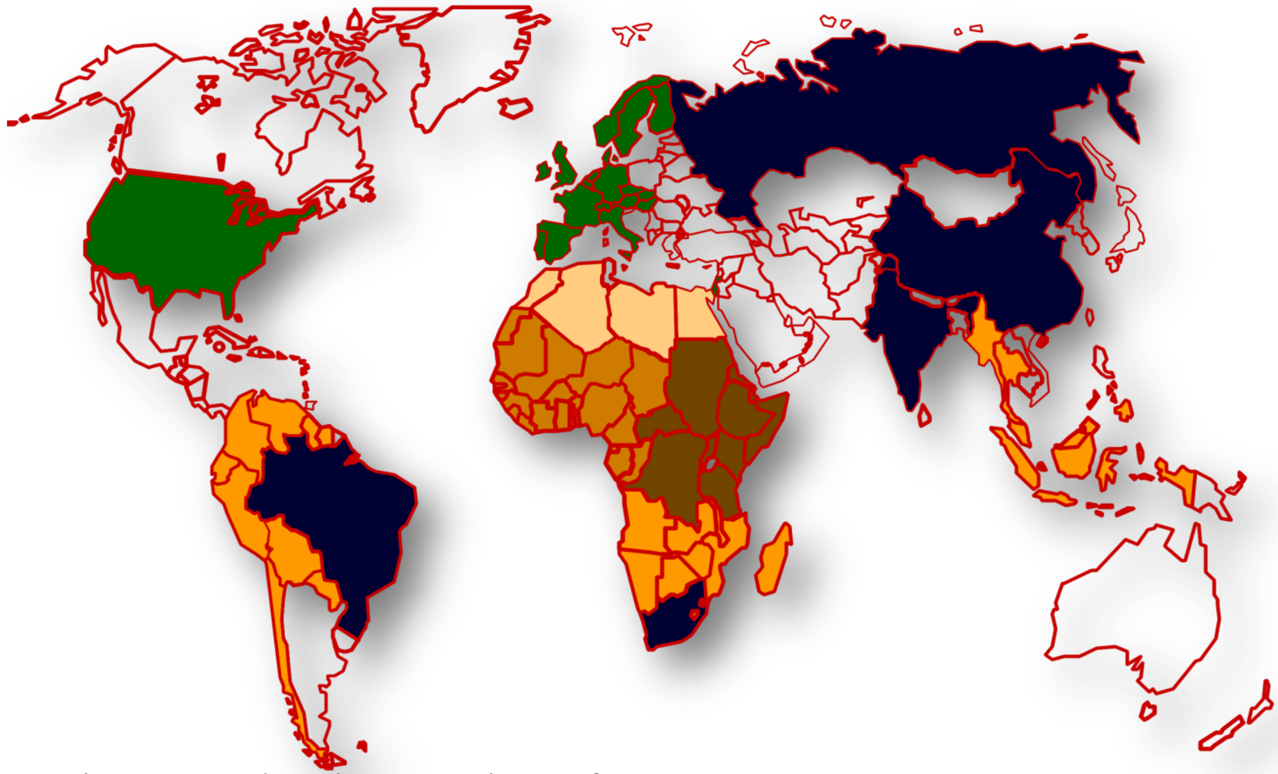
1. Introduction

NAFTC

Netherlands Agro, Food & Technology Centre

QuaTerNes

Supported by GMV and MFS



Offices

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

1. Introduction

NAFTC

Netherlands Agro, Food & Technology Centre

QuaTerNes

4 Offices

- Southern, Eastern, Western and Northern Africa

4 Focus Points

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

2. Personal Experience

Products: examples

QuaTerNes

Preserves

(ex) HAK > Haricots Verts in Navasha (since 1978), (Kenya)

> Cucumbers (Marocco)

Honey & Api Products

Honey Int. > Apinec (Et), ApiMiel (Burundi) etc.

Dry food Ingredients

Dika Int. > East African Dehy (Kenya), Various partners (Egypt)

Frozen Snacks

Delidor > Afropa , mango, pineapple etc. (Ghana)

2. Experience

Projects: examples

- Unifood, Egypt - *Frozen food*
- MABA, Egypt - *Seed & Fresh potatoes*
- Southern Africa, Dar-es-Salaam, Tanzania - *EU Matchmaking*
- I&J / McCain, Table Top, Lamberts Bay Canning, all in South Africa - *Potato value chain*
- Langenberg, South Africa - *Fruits & Vegetables Restructuring*
- Joss, Nigeria - *Closed systems & Dairy*
- Victoria Fish, Kenya - *Fish value chain*
- Copperbelt Dehy Herbs, Copperbelt, Zambia - *Dehy herbs*
- Copperbelt Dehy Vegetables, Zimbabwe - *Dehy vegetables*

2. Experience

Services

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Organic Products (Tradin / Sunopta / Traboca)

- Coffee (Ethiopia)
- Grains, sesame (Ethiopia)
- Cacao (Ghana)
- Cashew Nuts (various)
- Chickpeas, tapioca products, etc. (various)
- Palmoil (Guinea Conakry)
- Fruit concentrates, mango etc. (various)

Cooperation Wageningen University

- MFS > Guinea Conakry Trade Support
- Centers of Excellence / Brainport development in various states
- PPS / PIB, Ethiopia

3. Trends

More people, Less land

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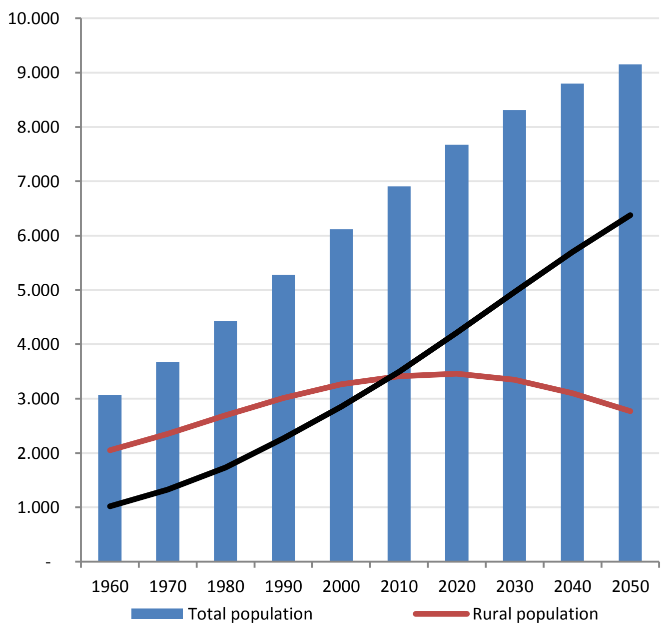
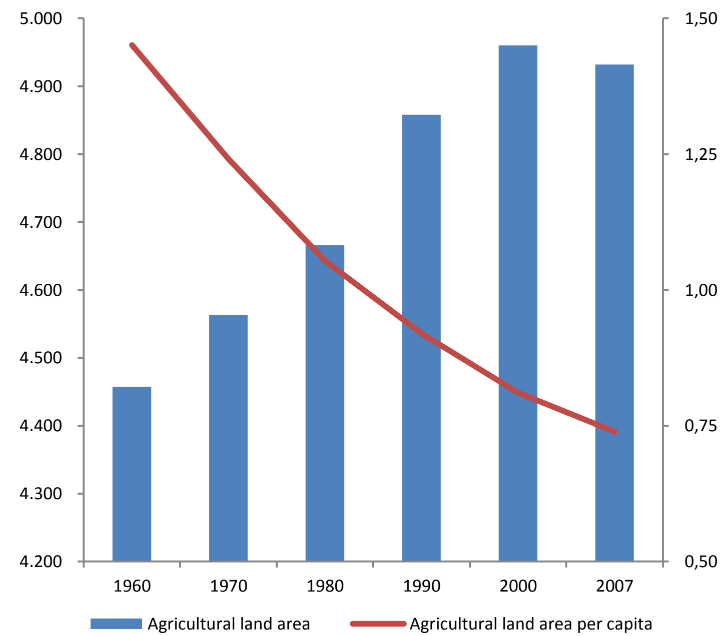
Global population (in millions)



Agricultural land (1,000 ha)

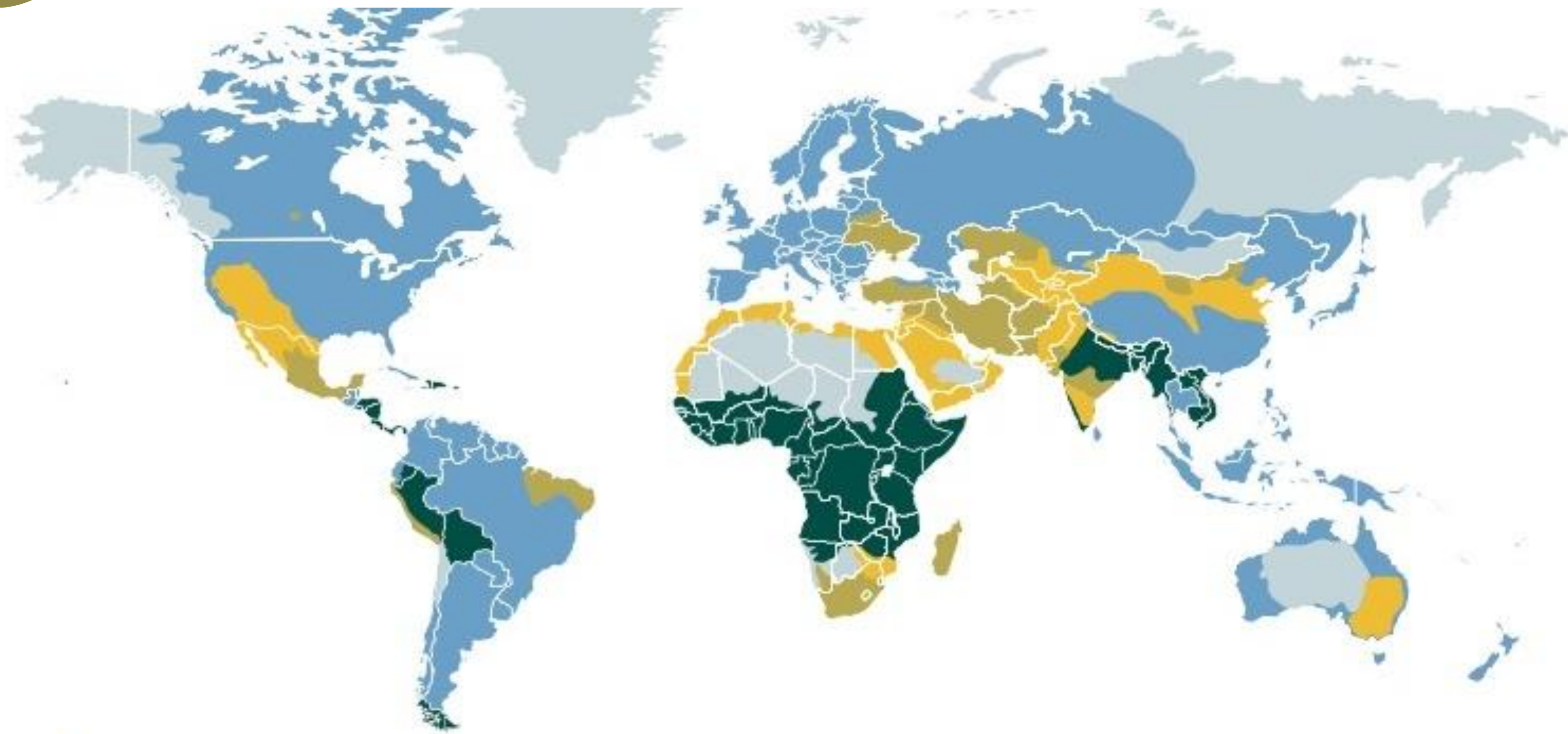


90% of population growth will occur in Sub-Saharan Africa (one billion or 49%) and Asia (900 million or 41%)

Source: FAO Stat, 'Framework for an Inclusive Food Strategy', Rabobank (2012)

3. Trends

Water, Ecology & Weather



Sufficient water available. (Temporary drought can occur)

Water scarcity expected in the future (More than 60% of available water is being used)

Physical water scarcity. (More is used than responsible. Future water supply in danger.)

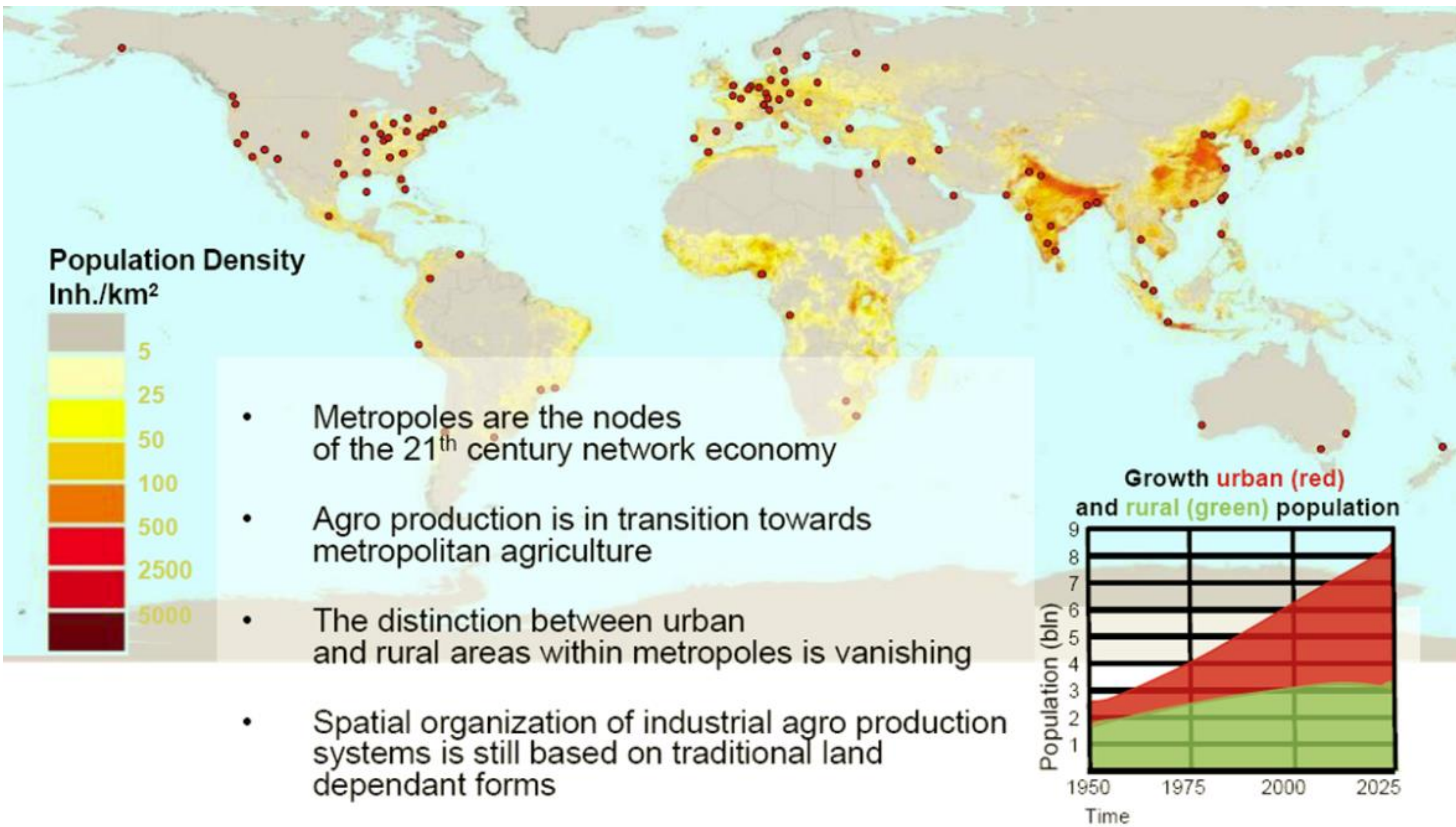
Economic water scarcity. (Sufficient water available, but men and means lack to make maximum use of it)

No data known.

Source: "Hightech Agrosystems", ABN AMRO (2012)

3. Trends

The World is Urbanizing



- Metropoles are the nodes of the 21th century network economy
- Agro production is in transition towards metropolitan agriculture
- The distinction between urban and rural areas within metropoles is vanishing
- Spatial organization of industrial agro production systems is still based on traditional land dependant forms

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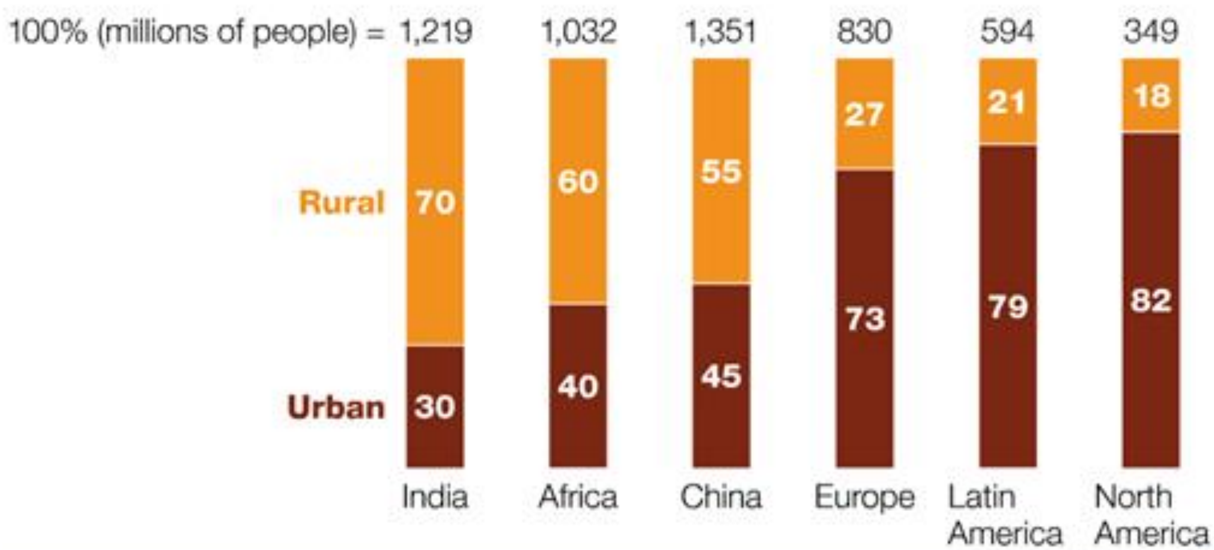
3. Trends

Share of population by region, %



	India	Africa	China	Europe	Latin America	North America
Number of cities with ≥1 million people	48	52	109	52	63	48

Source: United Nations; McKinsey Global Institute analysis (2010)

3. Trends

Urbanization level (%) in Africa

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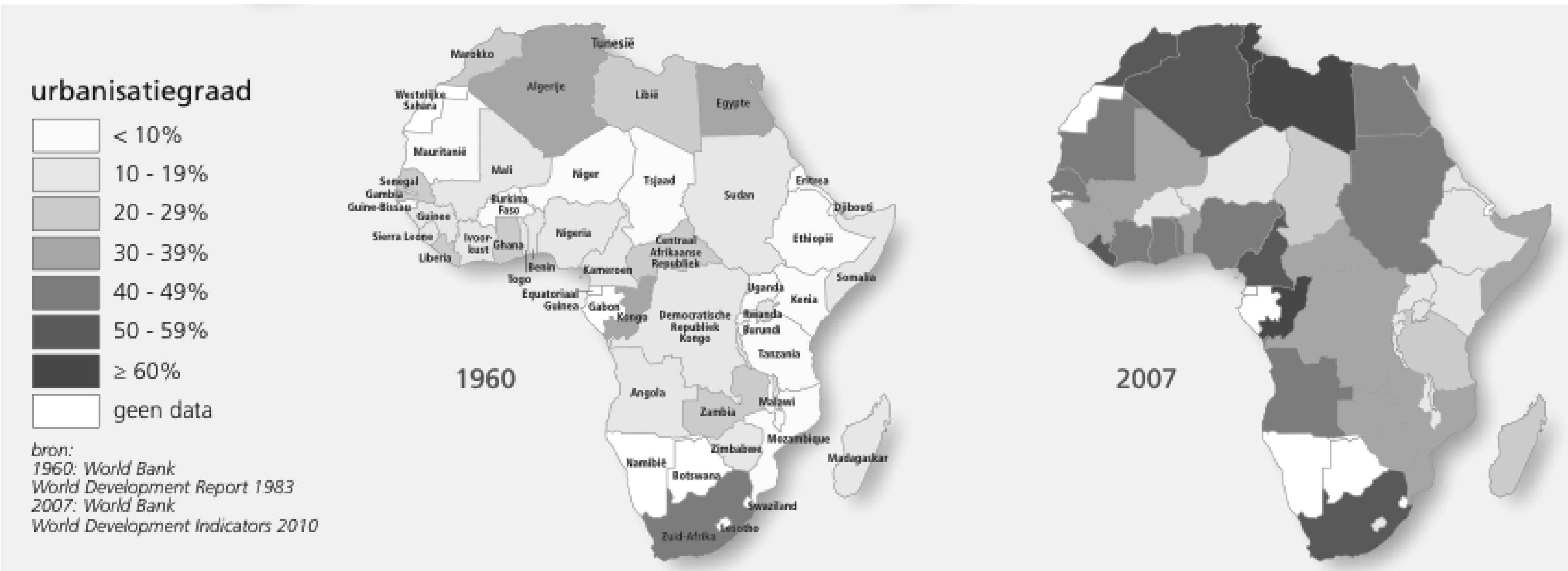


White: no data available

Source: ASC Leiden (Africa 2012 – African Studies Centre))

3. Trends

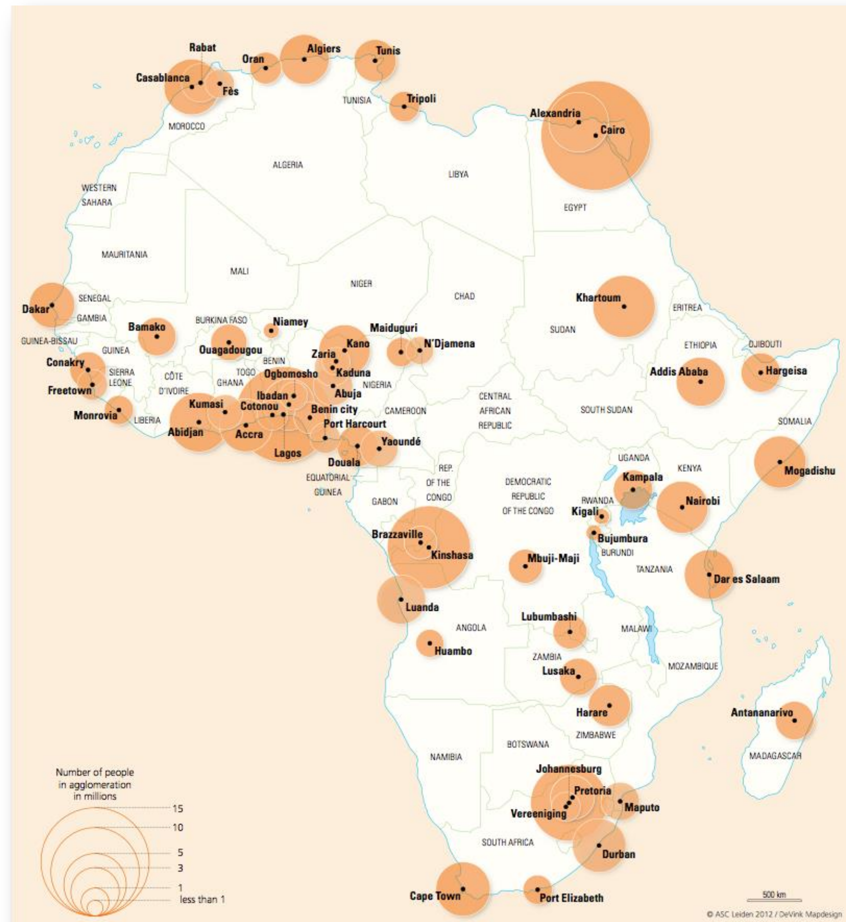
Urbanization in Africa

From:

- Continent of States

To:

- Continent of Cities



Source: ASC Leiden (Africa 2012 – African Studies Centre))

3. Trends

The Growing Wedge

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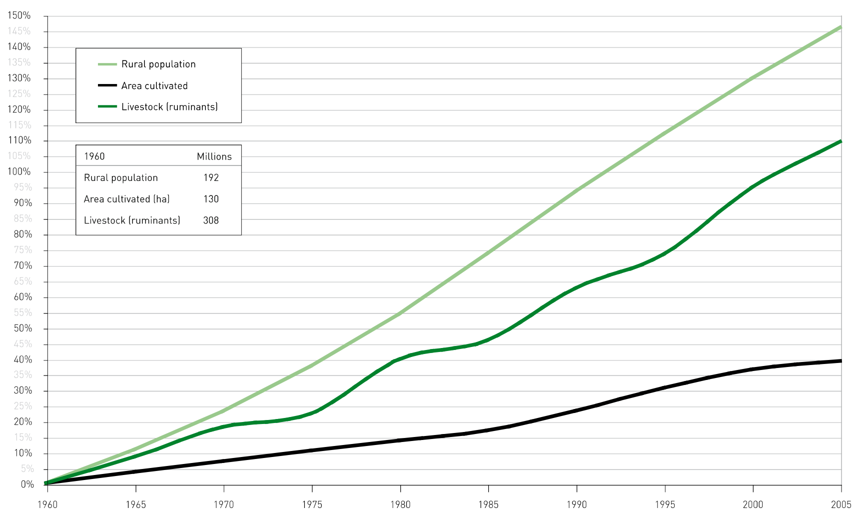
Agricultural growth lags behind on economic growth

Figure 2 Growth of rural population, cultivated and livestock in sub-Saharan Africa, 1960–2005



Note: Growth is expressed in percentage change from 1960.
Source: FAOSTAT (2007).

Rural population

Area cultivated

Livestock (ruminants)

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

3. Trends

Top 20 Hotspots for growth by 2025

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CITYSCOPE RANKINGS BY GROWTH, 2010–25

Emerging regions
Developed regions

Rank	Elderly, higher-income consumers[1]	Young entry-level consumers[2]	Laundry care products[3]	Commercial floor space[4]	Municipal water demand
1	Shanghai	Lagos	São Paulo	New York	Mumbai
2	Beijing	Dar es Salaam	Beijing	Beijing	Delhi
3	Tokyo	Dhaka	Rio de Janeiro	Shanghai	Shanghai
4	Tianjin	Quagadougou	Shanghai	Los Angeles	Guangzhou
5	Mumbai	Khartoum	Mexico City	Tokyo	Beijing
6	São Paulo	Ghaziabad	Moscow	Washington, D.C.	Buenos Aires
7	Osaka	Sanaa	Bangkok	Dallas	Kolkata
8	Chongqing	Nairobi	Istanbul	São Paulo	Khartoum
9	Delhi	Luanda	Manila	Guangzhou	Dhaka
10	Nanjing	Baghdad	Johannesburg	Chicago	Istanbul
11	Guangzhou	Kampala	Belo Horizonte	Houston	Dallas
12	New York	Ibadan	Porto Alegre	Tianjin	Pune
13	Seoul	Lusaka	Buenos Aires	Moscow	Las Vegas
14	Hong Kong	Kinshasa	Tianjin	Atlanta	Karachi
15	Wuhan	Kano	Tehran	Miami	São Paulo
16	Kolkata	Abidjan	New York	Hong Kong	Hyderabad, India
17	Shenyang	Abuja	Foshan	Mexico City	Lagos
18	Los Angeles	Bamako	Santiago	Shenzhen	Moscow
19	Toronto	Chittagong	Shenzhen	Phoenix	Wuhan
20	Ahmedabad	Port Harcourt	London	Istanbul	Manila

1 GROWTH IN POPULATION AGED 65+ WITH HOUSEHOLD INCOME > $20,000 AT PPP.
2 GROWTH IN POPULATION AGED ≤ 14 WITH HOUSEHOLD INCOME $7,500–$20,000 AT PPP.
3 PREDICTED GROWTH IN CONSUMER SPENDING ON LAUNDRY CARE PRODUCTS BASED ON A CITY-LEVEL MARKET DEMAND GROWTH MODEL.
4 INCLUDING REPLACEMENT FLOOR SPACE.
SOURCE: MCKINSEY GLOBAL INSTITUTE ANALYSIS

3. Trends

Consumer Preferences

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Preference for convenience, clean and healthy food

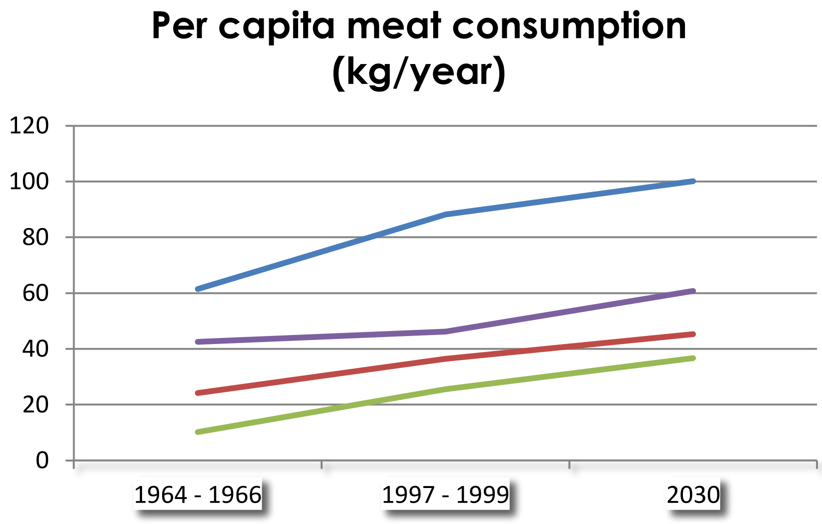
Is healthy food.. Good for food security?

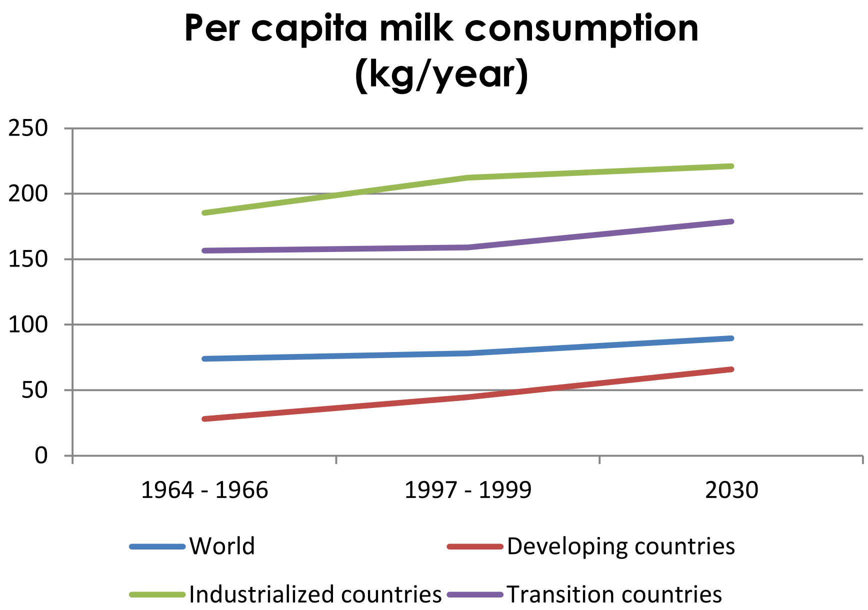
- **Shift in demand**
- **Diversification**
- **Function of Food**
- **Trends in (EU) Society**

3. Trends

Consumer Preferences → Change

Changing Consumption Consumer





Source: World Health Organization

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Demand in Metropoles:

From food to fashion to pharmaceuticals

Pharmaceuticals

Functional foods, Pharmaceuticals

Fashion

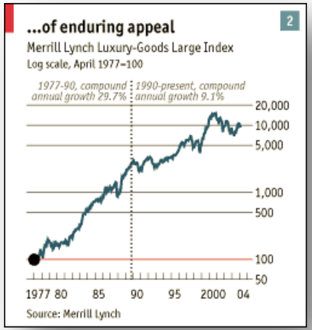
Flowers, Flavors, Fragrances

Food

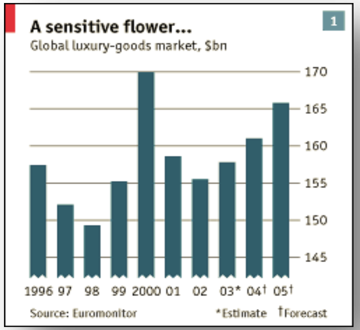
Fodder, Food Crops, Vegetables, Fruits

Energy

Fuel, Fibers



A 100-fold increase between 1977 and 2005



World spending on luxury goods in 2005: US% 165 bln

3. Trends

Consumer Preferences > 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

3. Trends

Trends in European Society

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Needing social cohesion (and safety)

- Especially older generation
- In more individualistic world

Increasing suspicion (decreasing authority)

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

(According to Wim Lageweg, MVO-2011)

3. Trends

Trends in European Society

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

(According to Wim Lageweg, MVO-2011)

4. Agro Hub Essentials

Improving Retail and Food Service Supply

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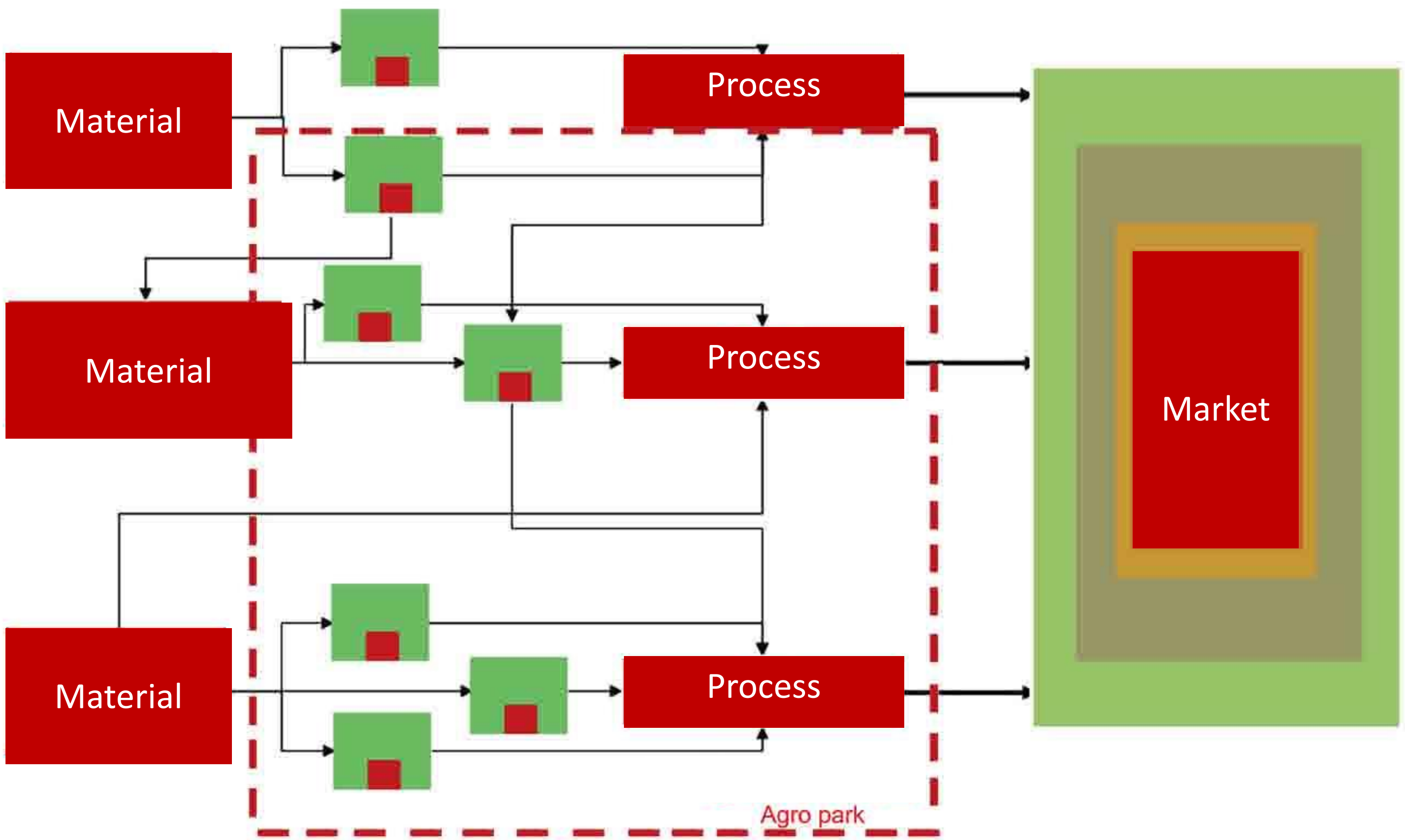
Shift of power to retailers and food service sectors:

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

4. Agro Hub Essentials

Supply Chain Development & Integration



Source: 'Agricultural Eco-Valley, Beijing China, Conceptual Master Plan, DHV – GMV – WUR (2011)

4. Agro Hub Essentials

Supply Chain Development & Integration (2)

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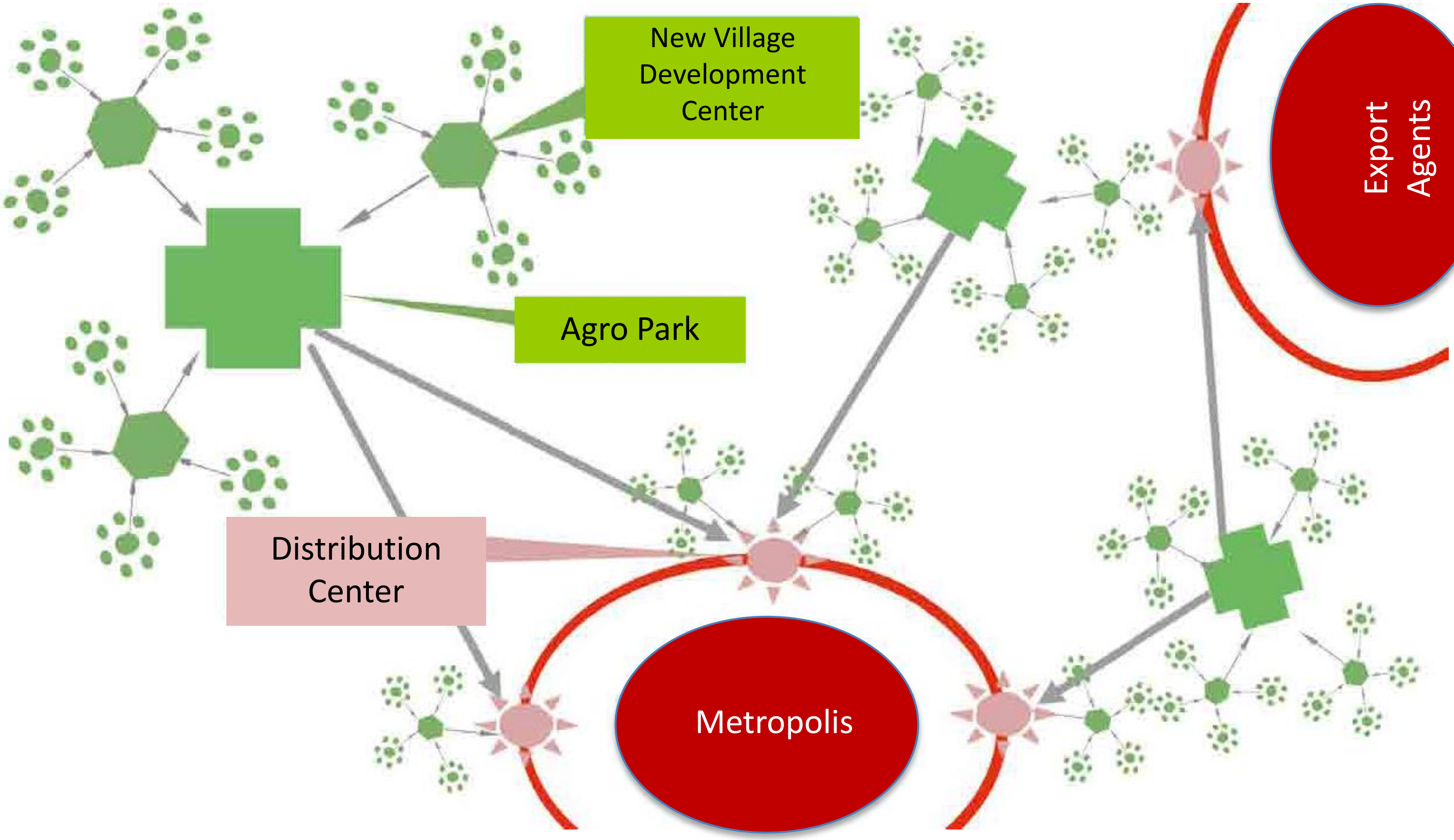
Intelligent Agro Logistics Networks



Source: 'Agricultural Eco-Valley, Beijing China, Conceptual Master Plan, DHV – GMV – WUR (2011)

4. Agro Hub Essentials

Fresh Park Venlo

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Source: 'Agricultural Eco-Valley, Beijing China, Conceptual Master Plan, DHV – GMV – WUR (2011)

Freshpark Venlo (The Netherlands):
Consolidation centre of 120 ha with controlled storage space, crossdocking stations, processing facilities, service providers, auction halls. Here, over 100 enterprises are located.

4. Agro Hub Essentials

Market Pressure ↔ Operations requirements

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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

5. Brain Ports & Centers of Excellence

Challenge for Southern Africa

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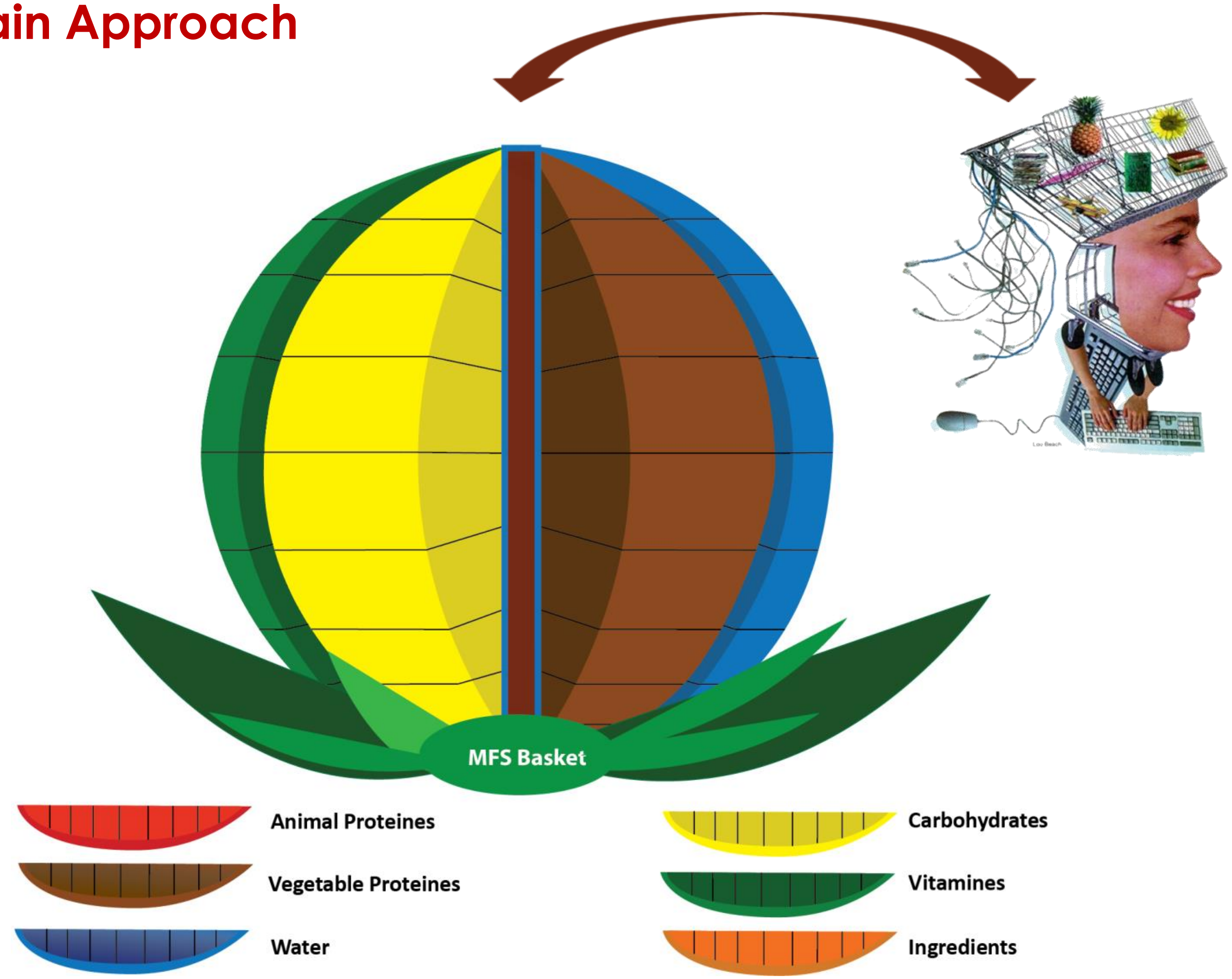
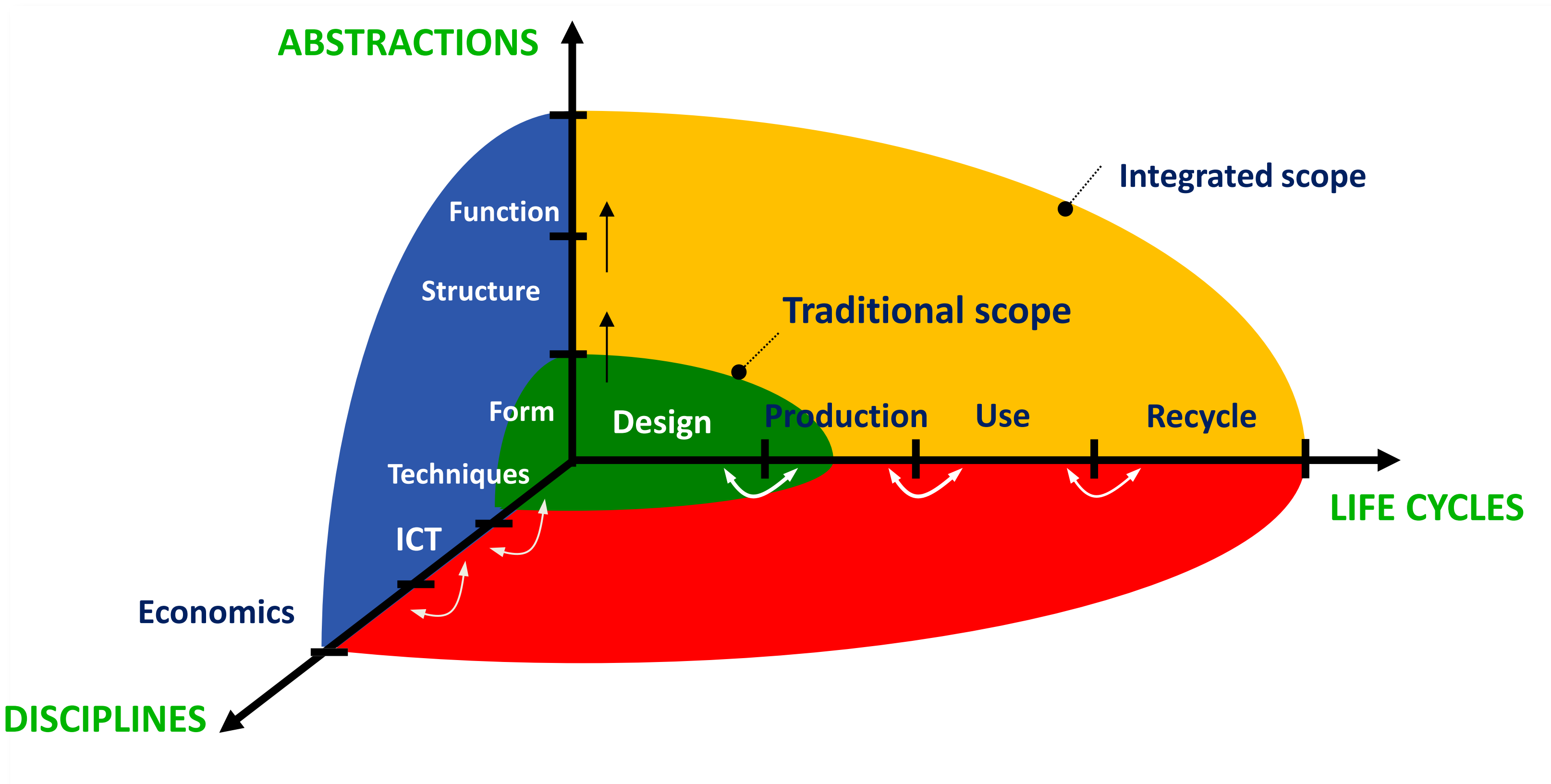
Supply Chain Approach



Integrated Approach of product and process development



5. Brain Ports & Centers of Excellence

Strength - Weakness Matrix

Flow / Know-how	Input	Production	Processing	Logistics	Trade	Consumer
Hardware	SA NL	SA NL	SA NL	SA NL	SA NL	SA NL
Software	SA NL	SA NL	SA NL	SA NL	SA NL	SA NL
Org. ware	SA NL	SA NL	SA NL	SA NL	SA NL	SA NL

SA = South Africa (Partner Country)/ NL = Netherlands

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5. Brain Ports & Centers of Excellence

Hardware / Orgware & Software

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Hardware	**Orgware**	**Software**
Contextual relationships	Implementation and operation	Knowledge management
Infrastructure	Business planning	R&D
Centers of Excellence	Investment in infrastructure	Team development
Trade facilities	Types of consortia	Management of emotions
Production facilities	**Stakeholders network**	Communicatie
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**
What can be held	**What can be organised**	**What can be thought and felt**

5. Brain Ports & Innovation Centers

“Innovation “ from The Netherlands

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R&D and Training Focus

- Economic and efficient production of sufficient, safe and nutritious food
- Sustain and enhance natural resources
- Maintain viable farming enterprises and contribute to sustainable communities
- Meet cultural and social demands of society

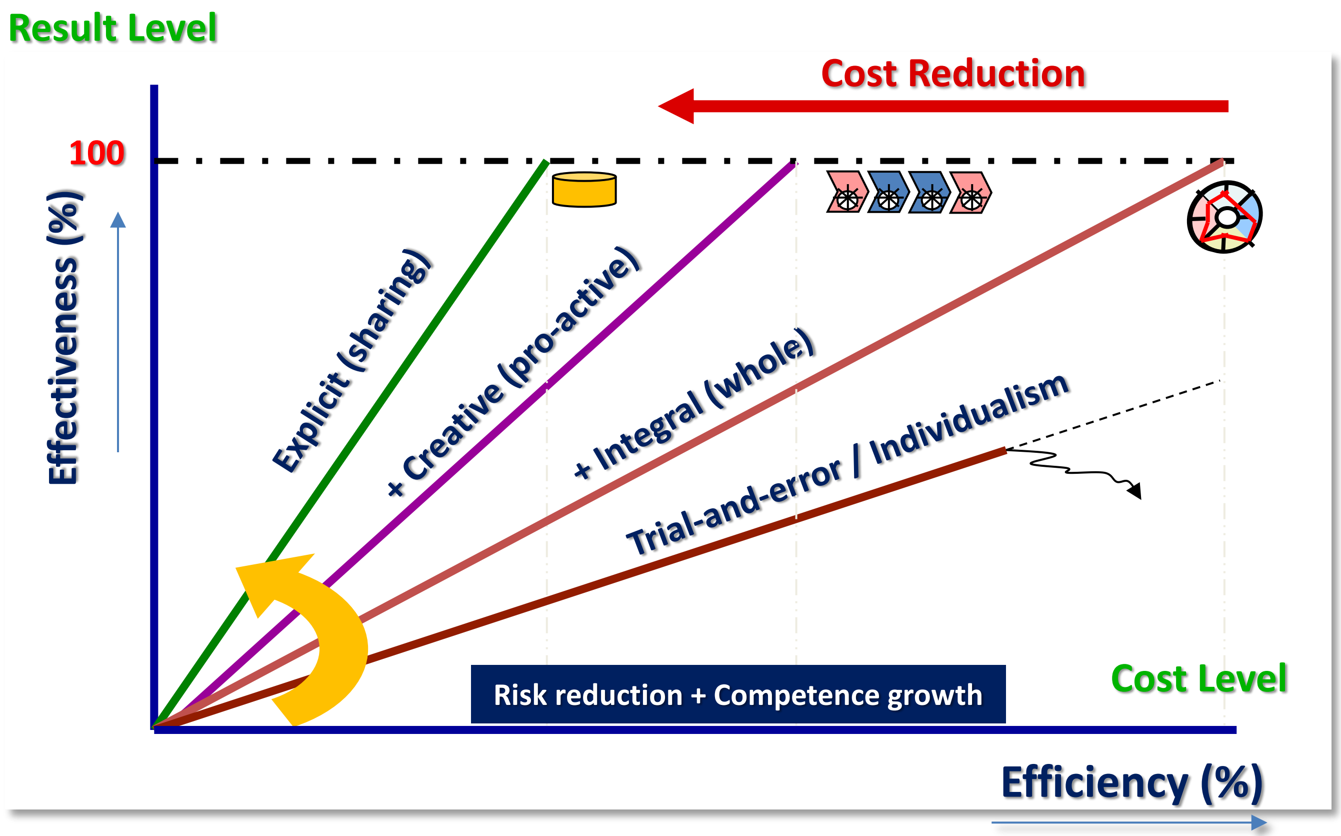
Metropolitan Food Security

Centers of Excellence:

- **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

6. Conclusions

Result Orientation



6. Conclusions

Strategy to Success

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7 P's:

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