Fresh Logistics: New Opportunities with an integral approach

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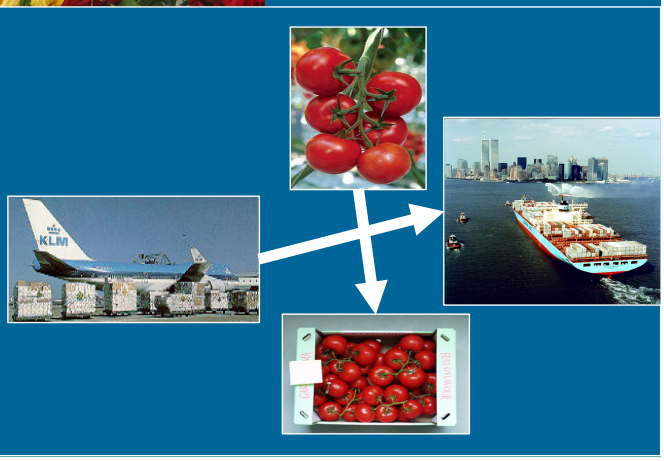
Agenda

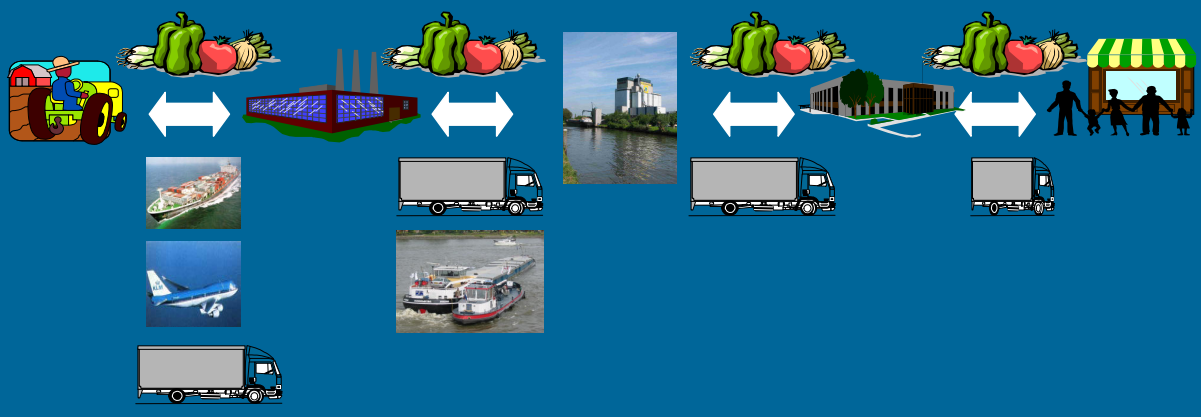
- The agriculture supply chain
- Dominant Trends in agriculture
- Trends in agriculture logistics
- Fresh logistics: An impulse for Supply Chain – redesign
- Case descriptions
- Conclusions

Extending fresh borders

Modality shift:
From airplane to reefer container



The Agriculture Supply Chain



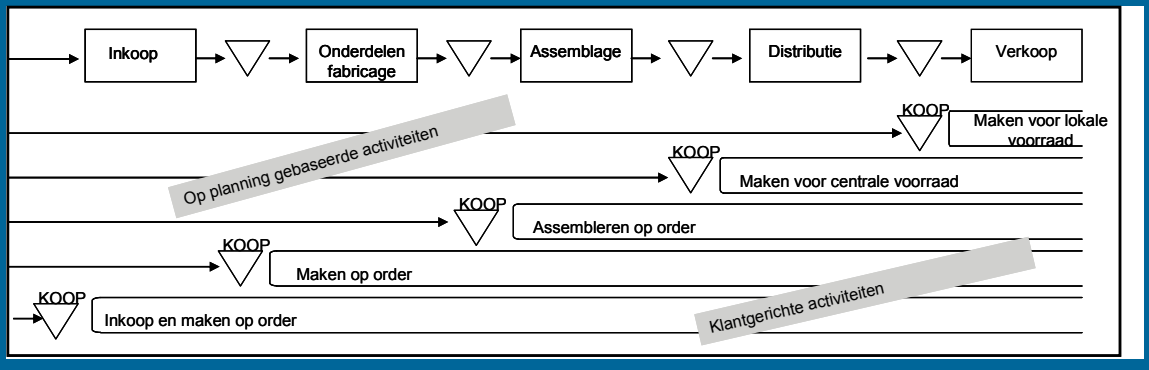
Primary Production | **Trade / Storage** | **Processing** | **Retailing / distribution**

Dominant Trends in Agriculture Supply Chains

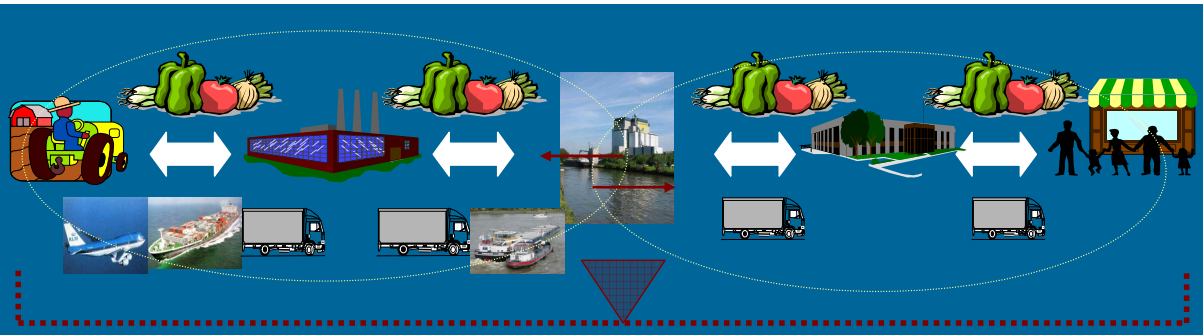
- Dominant power of big retailing companies
- Supply Chain Consolidation
- Outsourcing
- Increased focus on traceability
- Wider sourcing of supplies: more and more globally
  - Lower prices (low cost countries)
  - Diversification of the product range beyond what can be produced locally
  - Year round product availability
  - Advances in IT have increased the visibility of long supply chain and therefore easier to manage

Trends in Agriculture Logistics

- Global supply networks
  - Spatial concentration of production: economies of scale.
  - Inventory centralization
  - Longer distance movements: trunk/line – haul and local delivery operation.
  - Client order decoupling point: “To get closer to market”



Trends in Agriculture Logistics



"Efficiency"

- *Demand push: forecast*
- *Floating stock*
- *Modularity*
- *Value added services*
- *Variety of transport modes*

"Responsiveness"

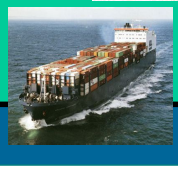
- *Demand pull from POS data*
- *Quick Response / ECR*
- *Break bulk / pre-pick and cross – dock via RDC's*
- *Flexible production schemes*
- *Predominantly road transport*




Product Quality

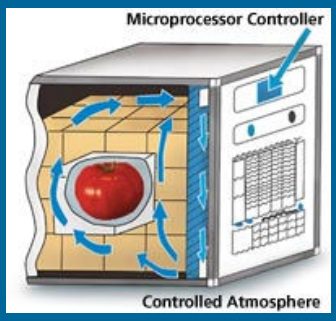
Fresh Logistics: Trade-off analysis

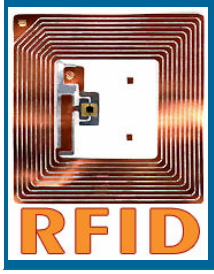
Costs **Service**


Trends in Agriculture Logistics

- Technological innovation

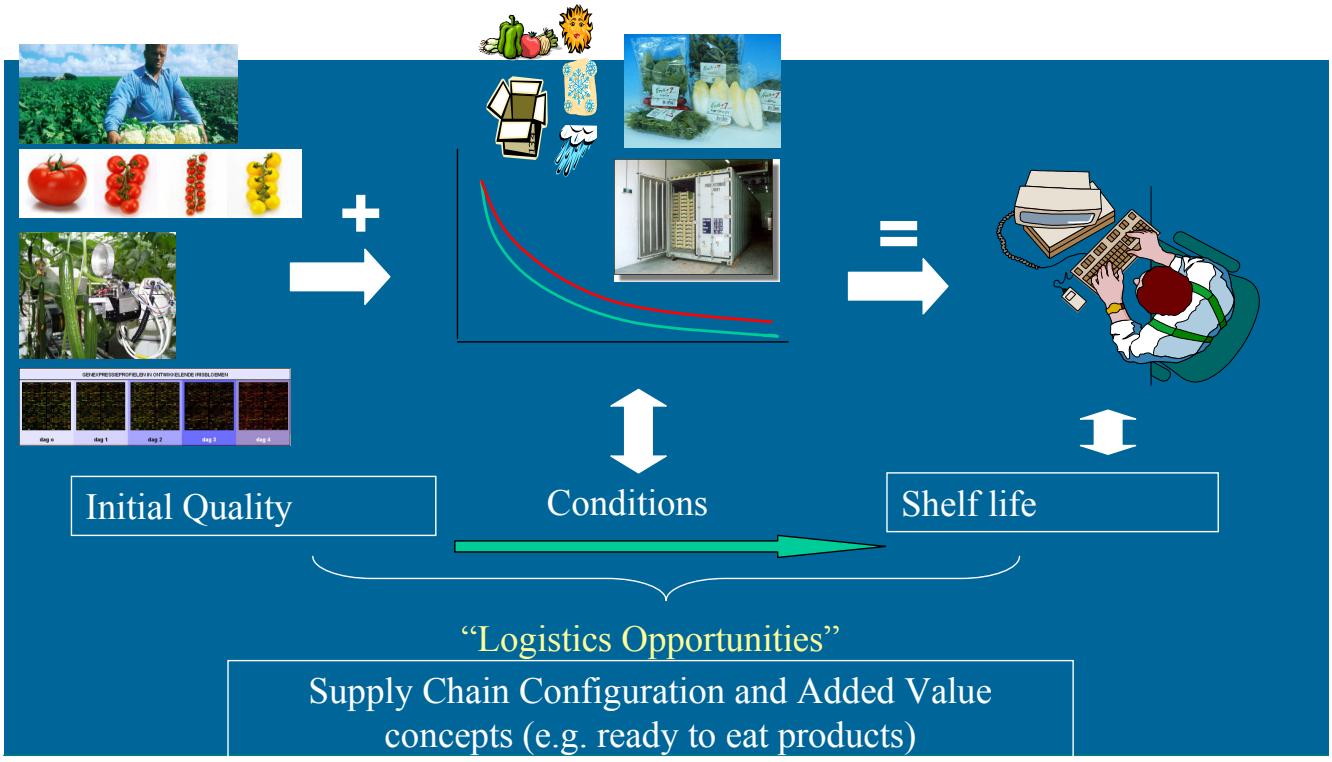




Trends in Agriculture Logistics

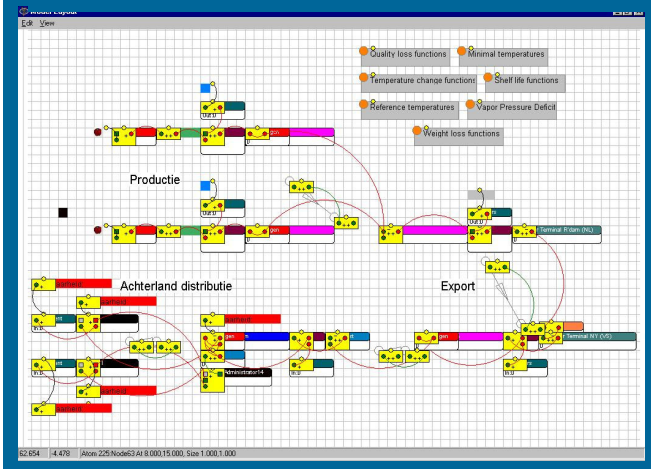
- Intermodality / modal shift
  - Wider sourcing of supplies: sea/air – road transport
  - Supply chain costs: intense competition commodities
  - Increased transaction - volume due to consolidation
  - Limitations road transport: congestion, pricing, regulation, …..

Fresh Logistics: An impulse for Supply Chain redesign



Fresh Logistics: An impulse for Supply Chain redesign

- Simulation and scenario – analysis: Aladin



Agents:

- Food factory or grower: biological variation
- Transportation unit: type of transport + settings?
- Storing / distribution unit: climate control settings?
- Food product: specific product + quality decay model
- Demand controller

"Impact of different supply chain configurations / use of different transport modes on: shelf life, service, cost": Potential Solutions

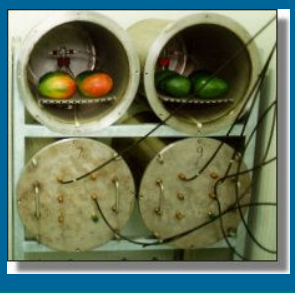
Fresh Logistics: An impulse for Supply Chain redesign

- Testing



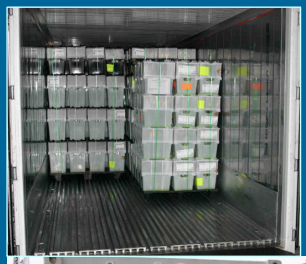






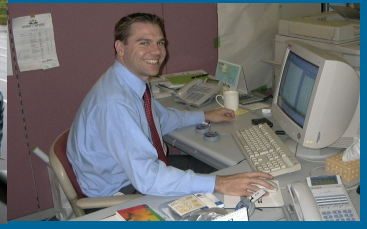
Fresh Logistics: An impulse for Supply Chain redesign

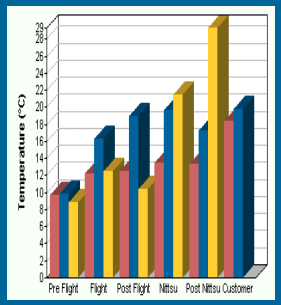
- Pilot scale testing



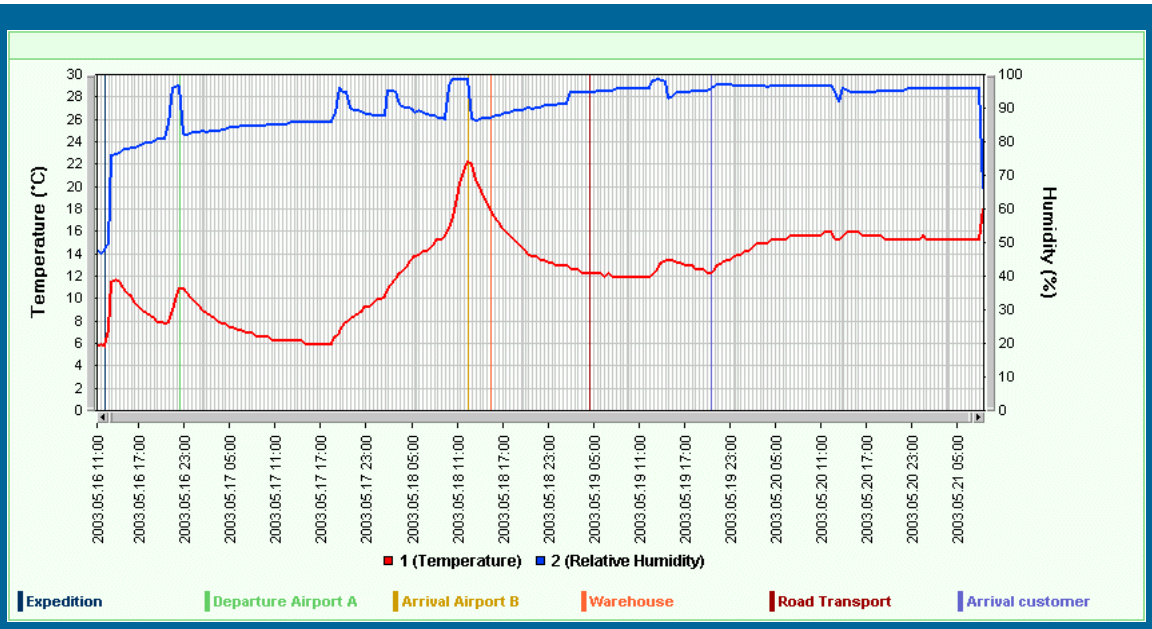






Fresh Logistics: An impulse for Supply Chain redesign



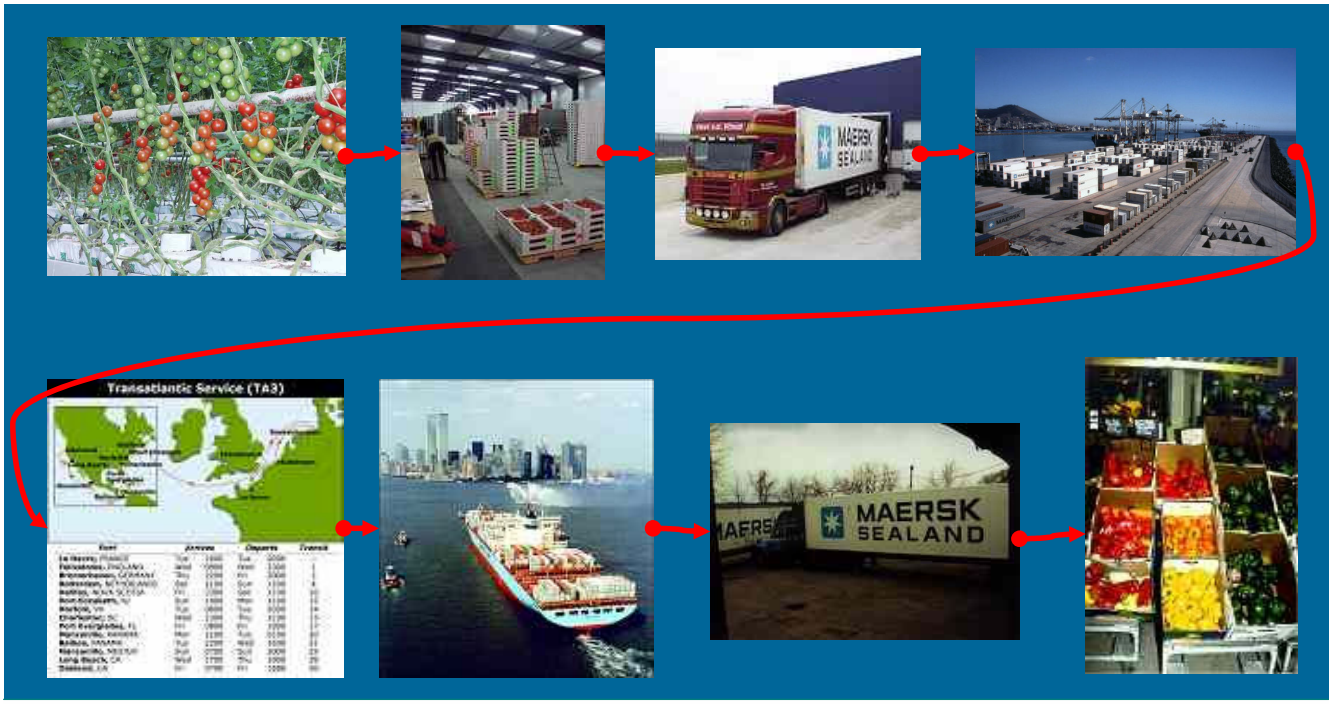
Case: From air cargo to deep sea shipping

Replace air by sea transport:

- Product: initial quality, cv's
- Climate con
- Packaging
- Logistics:
  - lead time
  - organisation

Integral solution

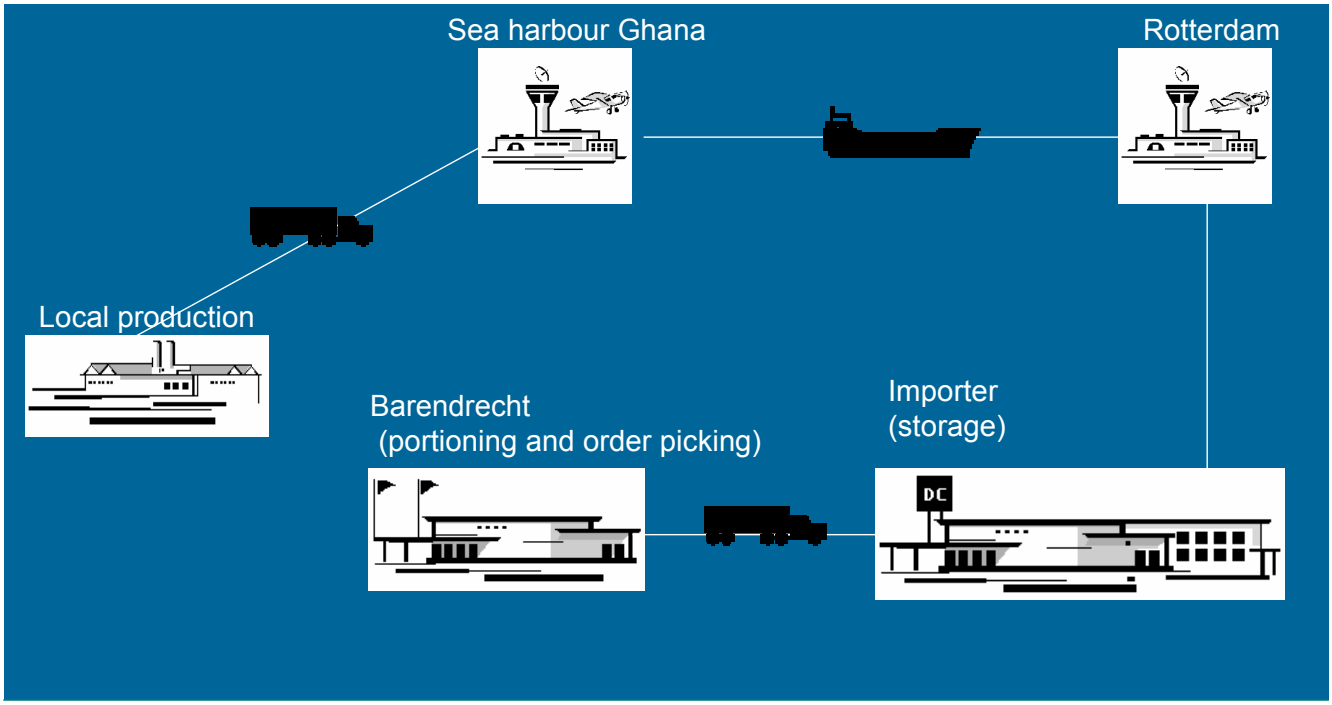
Case: From air cargo to deep sea shipping



Case: Optimal fresh cut pineapple chain Ghana – Rotterdam

Scenario 1

Boat transport chain



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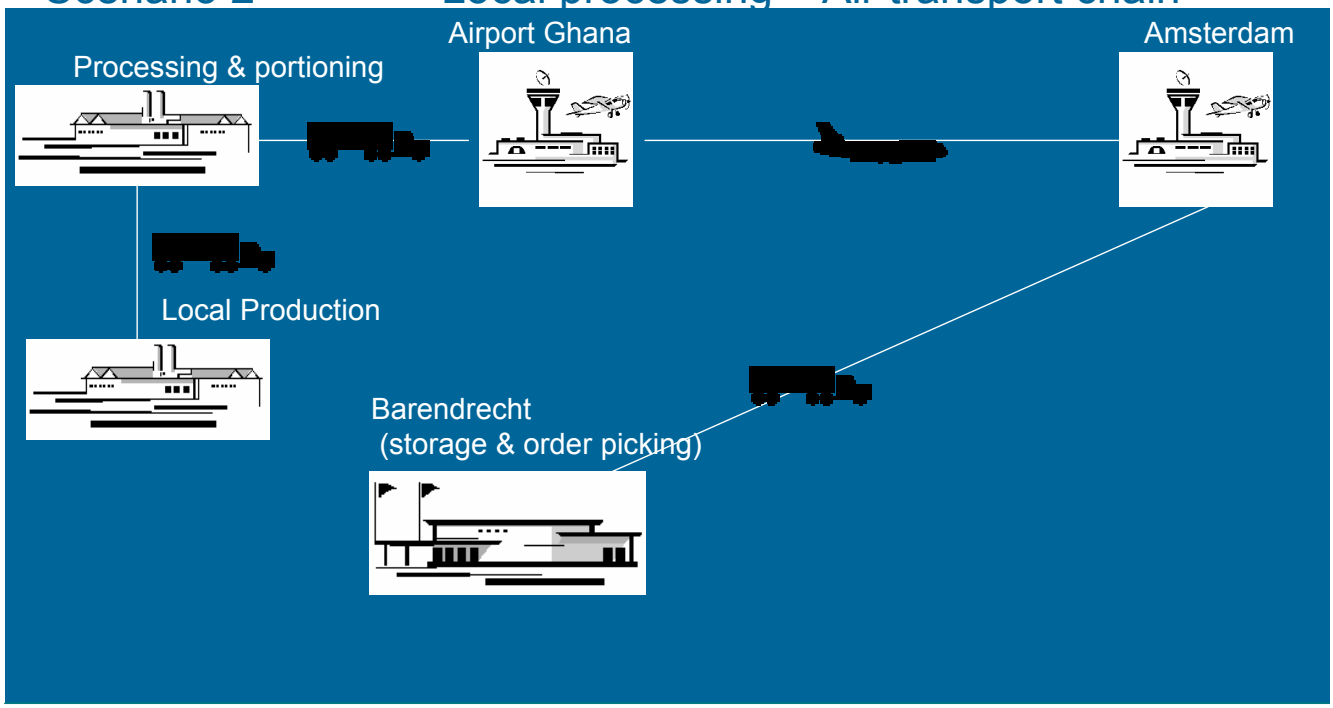
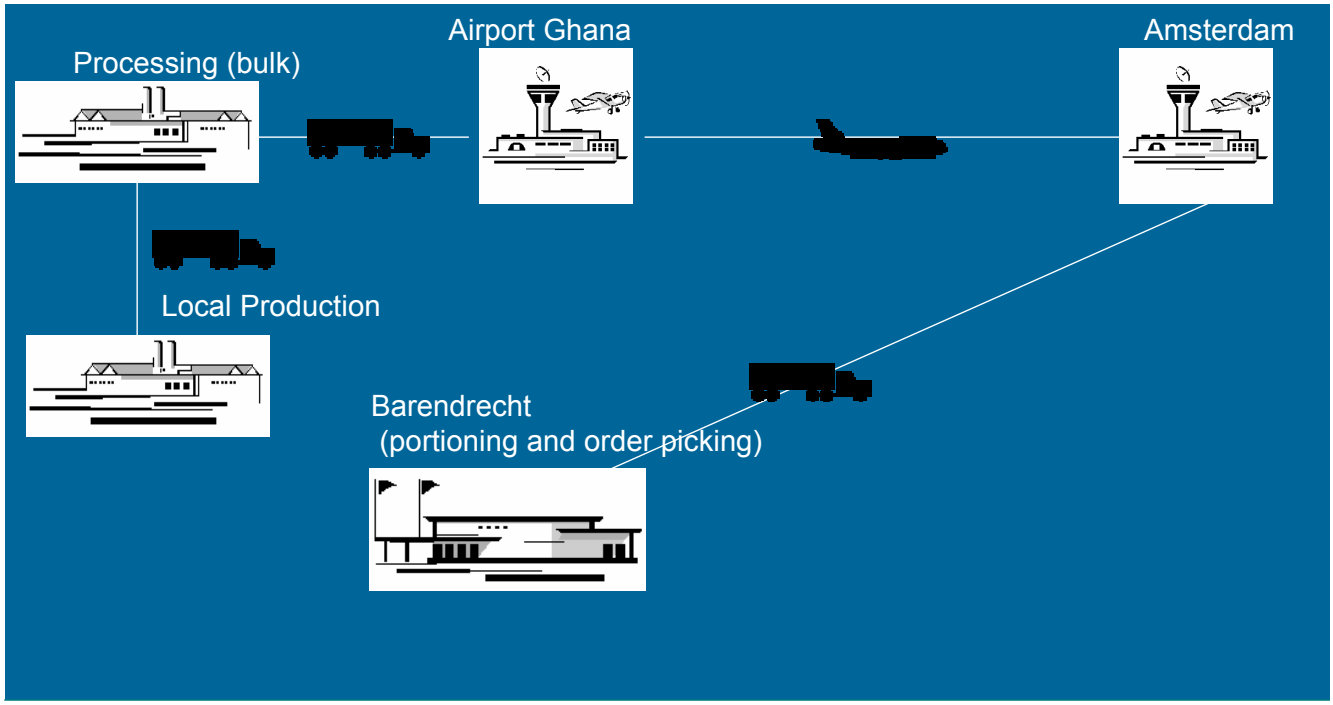
Scenario 2 Local processing – Air transport chain



Case: Optimal fresh cut pineapple chain Ghana – Rotterdam

Scenario 3 Air transport chain



Case: Regional Consolidation

movie

Agro parks: A systems innovation in the concept of urban agrofood production and processing

- Spatial clustering of different agro-production chains
- Spatial combination of agro-processing and non-agro functions (building, industrial estate or region)
- Scale increase in production further enables industrial processing
- Application of principles of industrial ecology, i.e. mutual use of waste and by-products
- Reduction of transport and veterinary risks
- CRUX: clustering provides context for sustainable innovations

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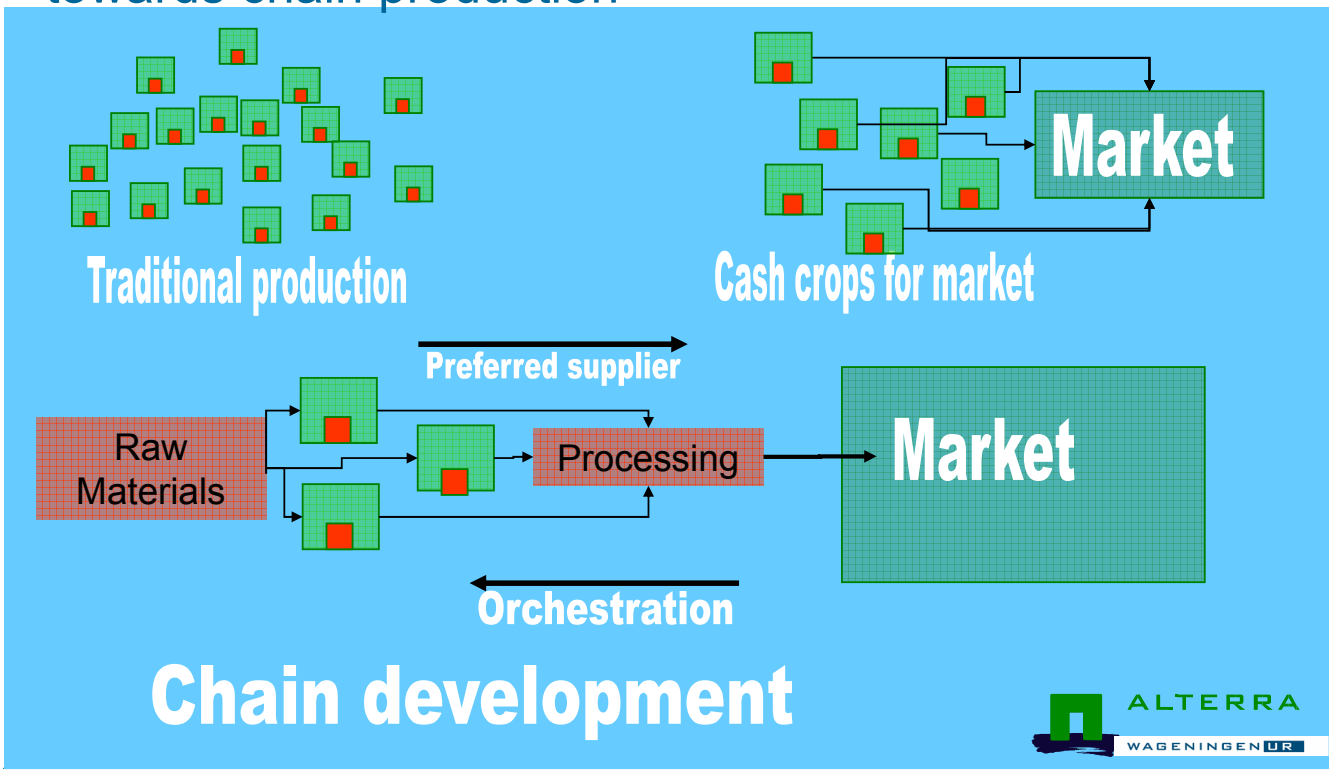
Agropark development: From traditional production towards chain production

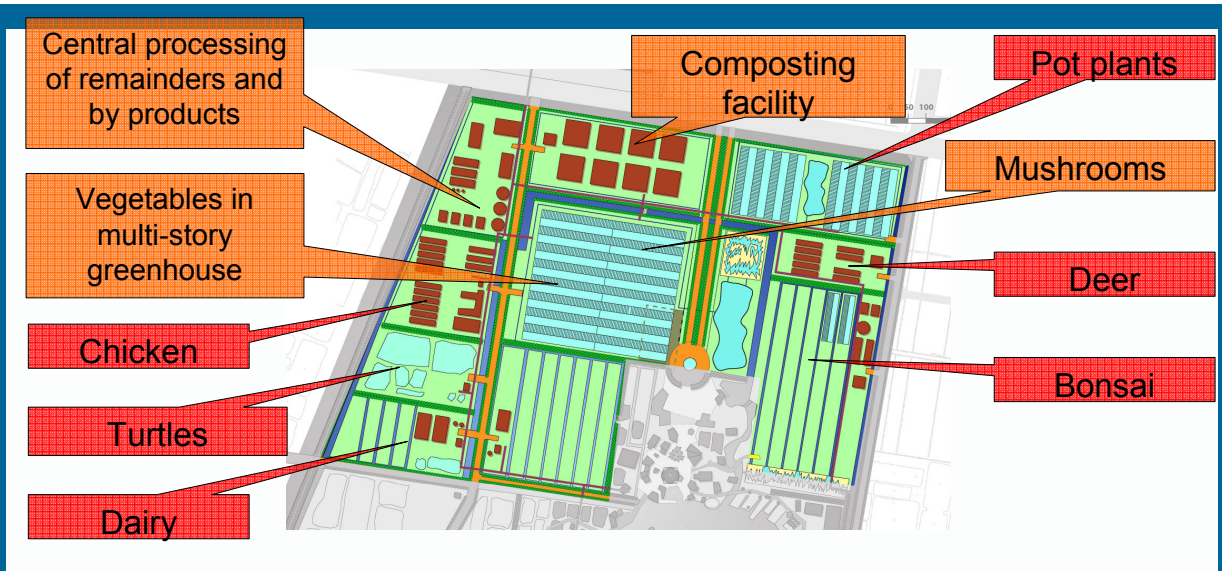


Basic principle: Systems redesign while focussing on issues that matter in sustainable development.

- Planet: From focus on production chain towards focus on flows of energy and matter.
- People: From focus on the technical system towards focus on organisation and knowledge management.
- Profit: Focus on integral production network for improved chain relations, cost reduction and quality management.

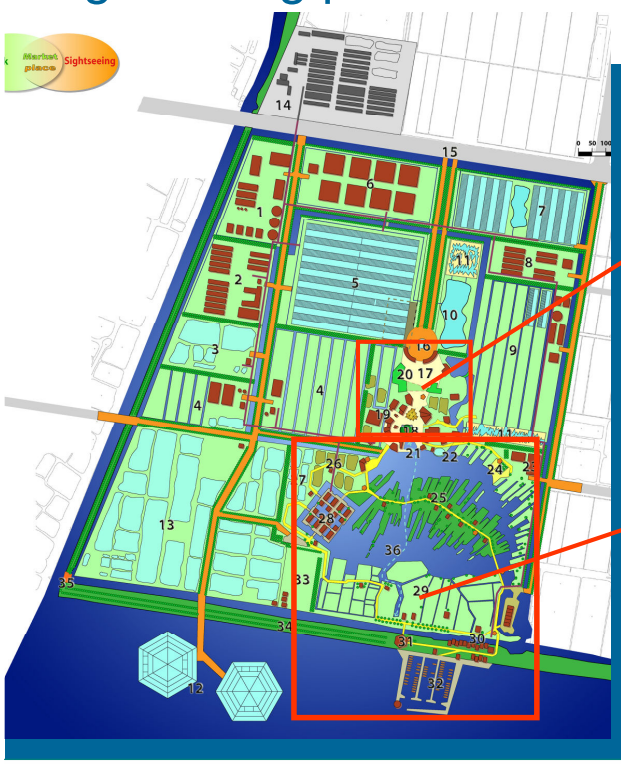
Agro Park: Examples
WAZ-Holland Park, Changzhou, China

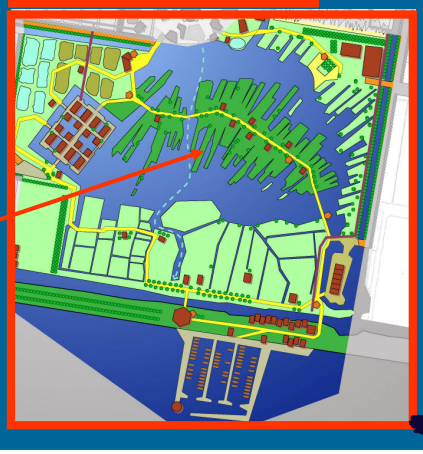
WAZ-Holland Park (China)



- Spatial clustering of Chinese and Dutch Holdings.
- Intensive exchange of remainders and byproducts in central processing unit.
- Combination with market place and sightseeing park
- Planned start: 2007

Combination of agropark, market place and sightseeing park in WAZ-Holland Park





Market place:

- Education
- Showcase
- Hotels & restaurants
- Sales

Sightseeing Park

- Recreation
- Education
- Demonstration
- Restaurants

Conclusions

- Agrifood chains & networks are getting more dynamic, insecure and complex
- Robust logistic redesign needs a multidisciplinary and integral approach
- Modeling, visualization & simulation tools can connect different disciplines
- Type of cases: from pragmatic, business driven to visionary and ambitious

Thanks for your attention