Cooperative Business Models, Sustainable Innovation and the Digital Economy

Dr. Cynthia Giagnocavo

University of Almería Cátedra COEXPHAL-UAL

Horticulture, Cooperative Studies and Sustainable Development

Co-operative entrepreneurship: a tool for a sustainable, viable future

Santander International Event // 21 & 22 June // 2018

Co-funded by
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R+D+i needs of local agricultural community

Multidisciplinary – search for innovation solutions to technical, social, business/economic and environmental issues

Establish research networks and clusters

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International Co-operative Alliance
Committee on Co-operative Research

Different types of innovation, change and transition - use and impact of data

Tecnological Social

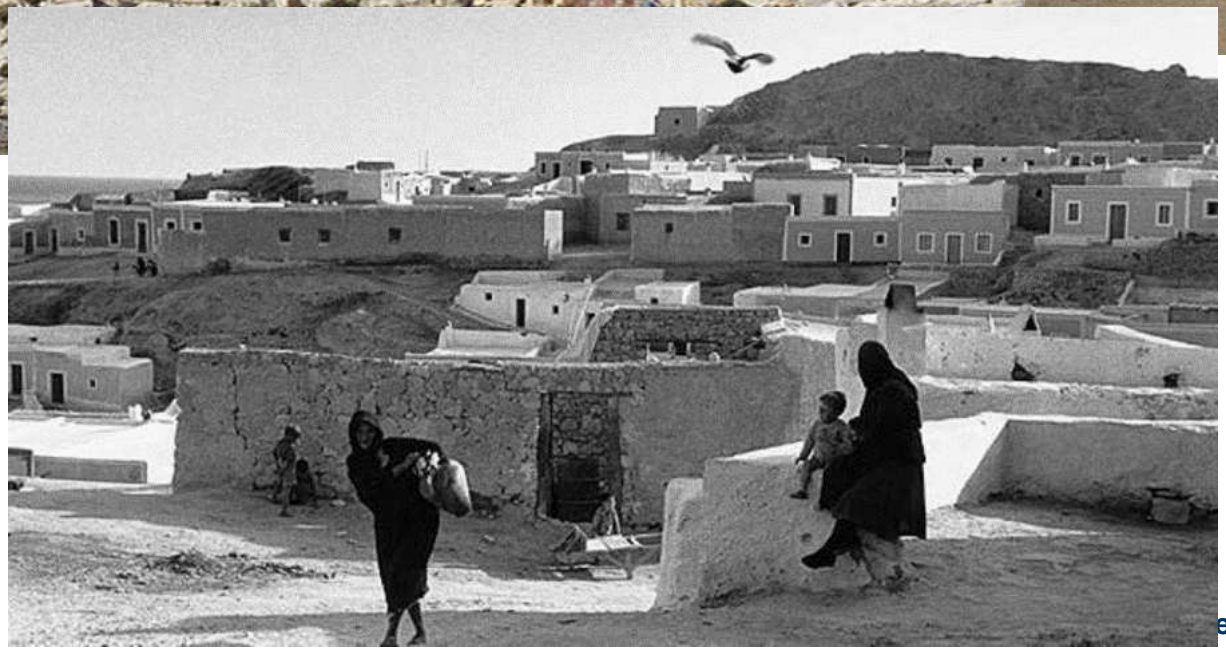
Economic

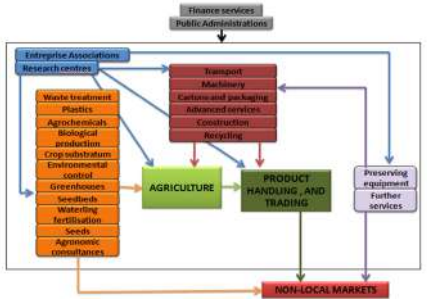
Organisational Institutional

Let´s begin with Almería:

Cluster of smallholder, family farming, intensive greenhouses

Conditions in 1960s





Existing Agro-Industrial-Tech Cluster:

- **15.000 Family Farmers** /2 ha. mid-tech greenhouses
- **80 Producer Organizations** (various business models, coops, hybrid, Ltd., S.A.T.s)
- **Employment** for **40.000/150 nationalities**
- **250 auxiliary businesses /375 exporters/50+ Transport Companies**
- **Euro 2.194 million turnover, Euro 2.000 million auxiliary business**
- **75% exports/40 product varieties/2.4 million tons**
- **100% of farms certified/90% integrated pest management/10% organic production +**
- **Cooperative finance/R+D+i**

40 AÑOS COEXPHAL unidosexportandoFuturo

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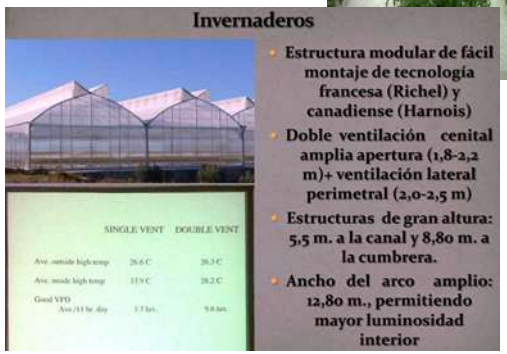
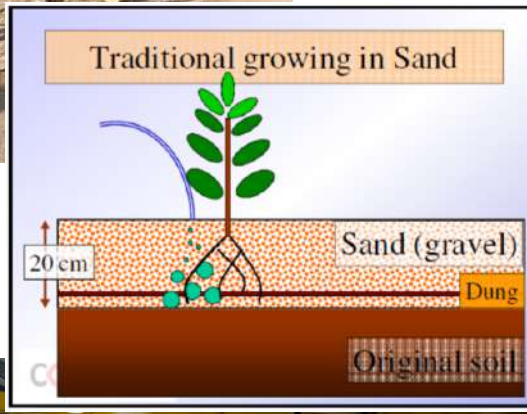
PRODUCCIÓN INTEGRADA ANDALUCÍA

PRODUCTO CERTIFICADO agrocolor PRODUCCIÓN ECOLÓGICA

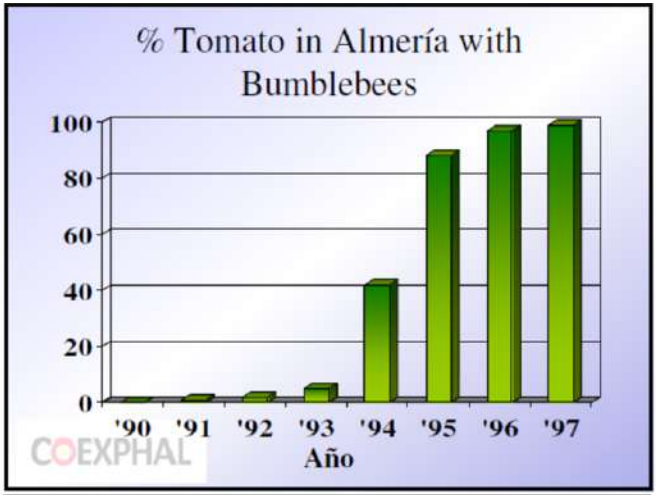
Transformation based on credit and agricultural cooperatives

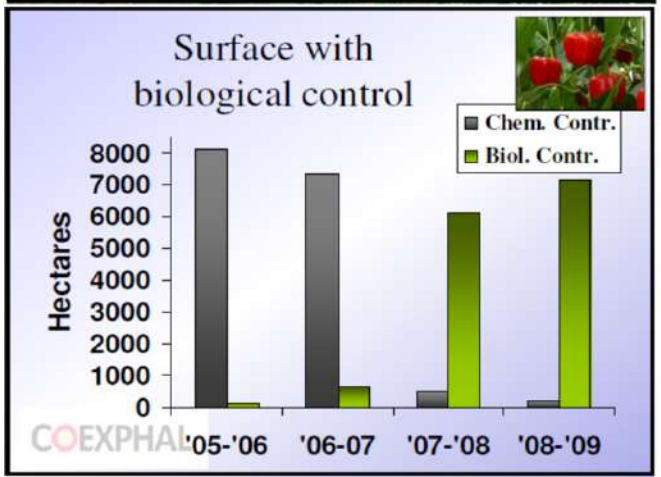
complex KNOWLEDGE NETWORKS AND RISK MANAGEMENT; innovation and experiments; technology; institution building; data creation/gathering/management; transition; organisational/institutional ability to create value (for whom?)

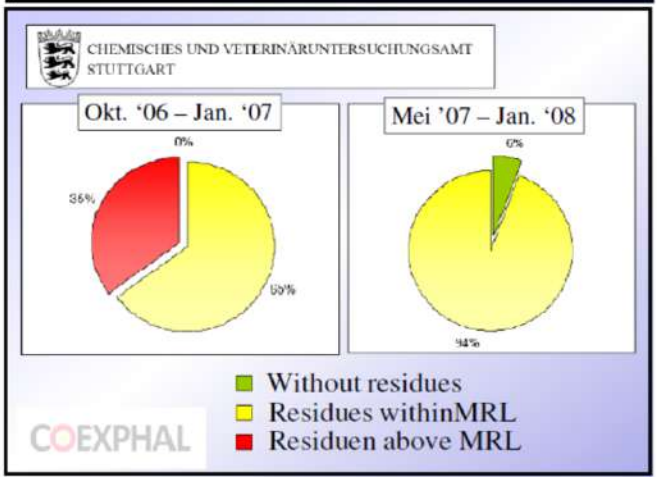



Traditional growing in Sand
Sand (gravel)
20 cm
Dung
Original soil

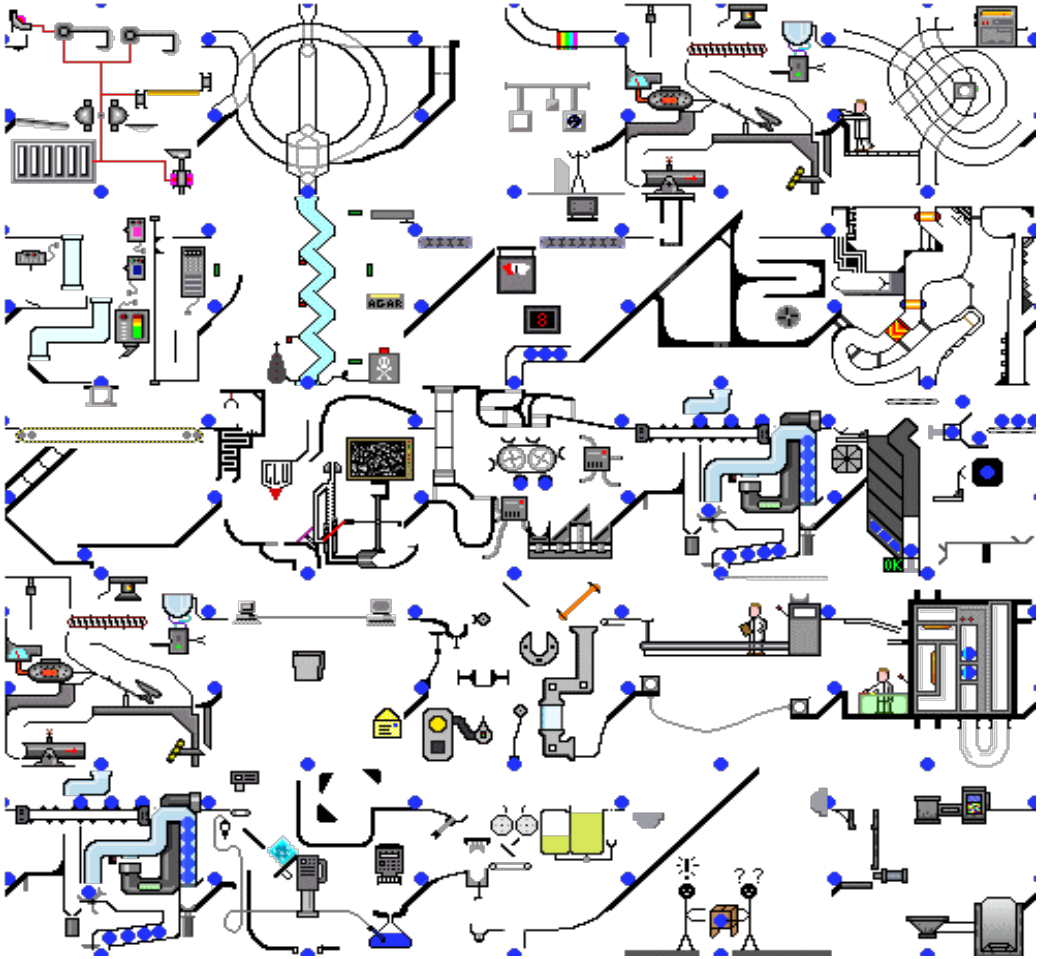

Revolution!


% Tomato in Almería with Bumblebees
100
80
60
40
20
0
'90
'91
'92
'93
'94
'95
'96
'97
Año
COEXPHAL


Surface with biological control
Chem. Contr.
Biol. Contr.
Hectares
8000
7000
6000
5000
4000
3000
2000
1000
0
'05-'06
'06-07
'07-'08
'08-'09
COEXPHAL


CHEMISCHES UND VETERINÄRUNTERSUCHUNGSAMT STUTTGART
Okt. '06 – Jan. '07
Mei '07 – Jan. '08
0%
35%
65%
6%
94%
Without residues
Residues withinMRL
Residuen above MRL
COEXPHAL

DATA flows...



Will be equally important as capital and material flows., thanks to ICTs ... But with 13,500 farmers, 70 Cooperatives, SMEs, etc?

What is next? Impact/Value of Big Data/digitisation?

- Focus on processes of innovation, where and how is value added?
- Networks, relations and collaborations.
- How do SMEs reach economies of scale through big data, in both capacity to innovate and the economic power to do so? Does scale still matter?
- How does it change the business model?

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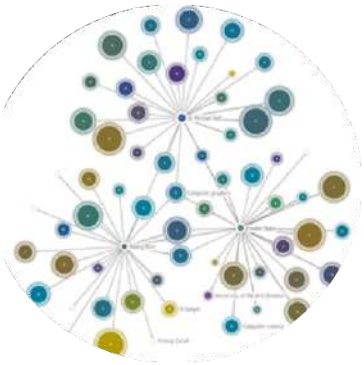
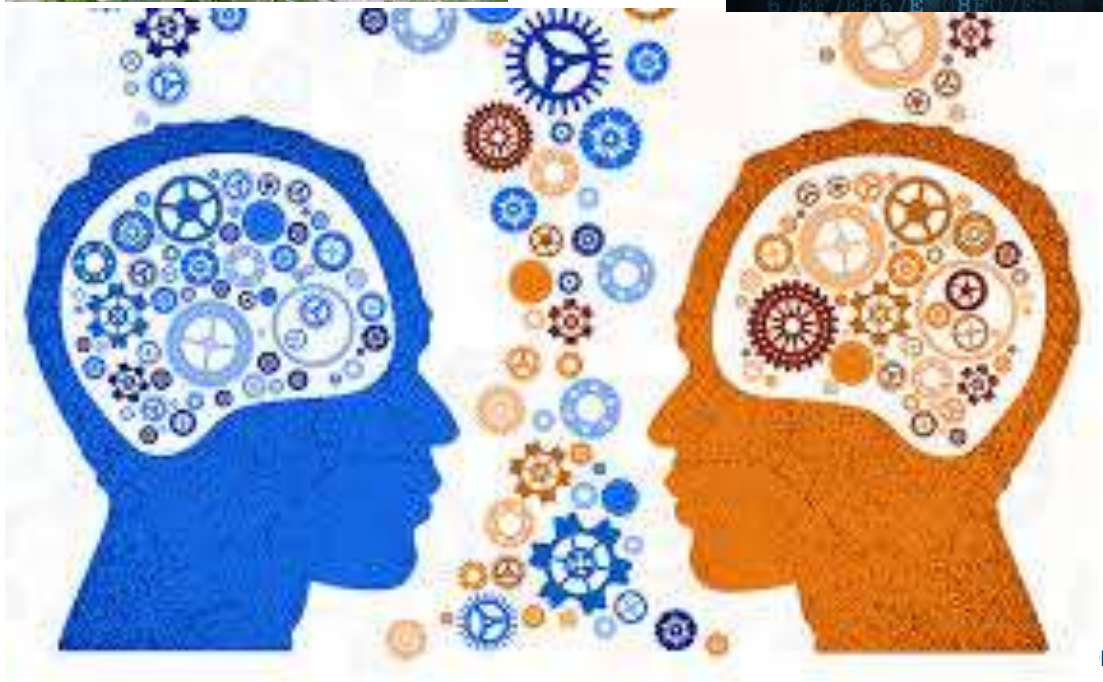


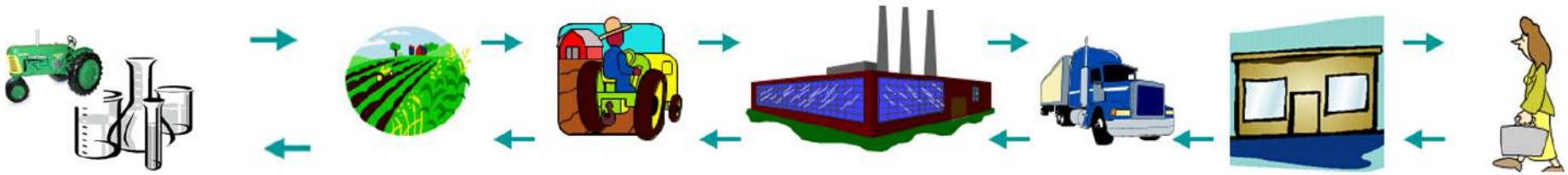
Transition in concept of business model

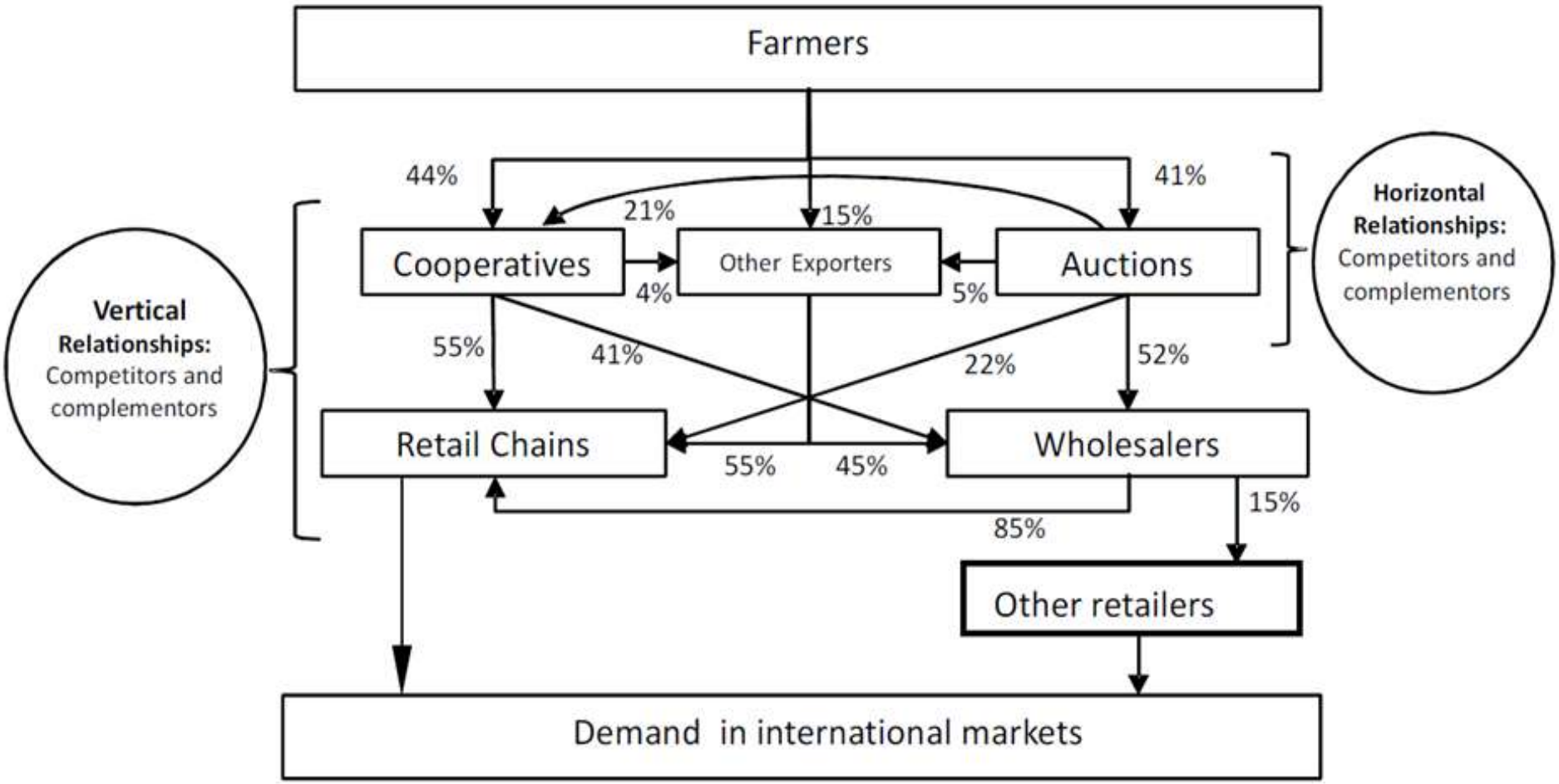
- **Business model design is under transition**: from company-specific business/property based models towards networked and more comprehensive ecosystem business models.
- Different supply and value chains will compete – depends on strength of "ecosystem" not just on individual firms (Porter).
- Change of focus: from viewing the IOT/data primarily as a technology platform to viewing it as a business ecosystem
- Competitive advantages will take place between business models, and not just between products, services, and technologies.

Perspective of product, production, value?

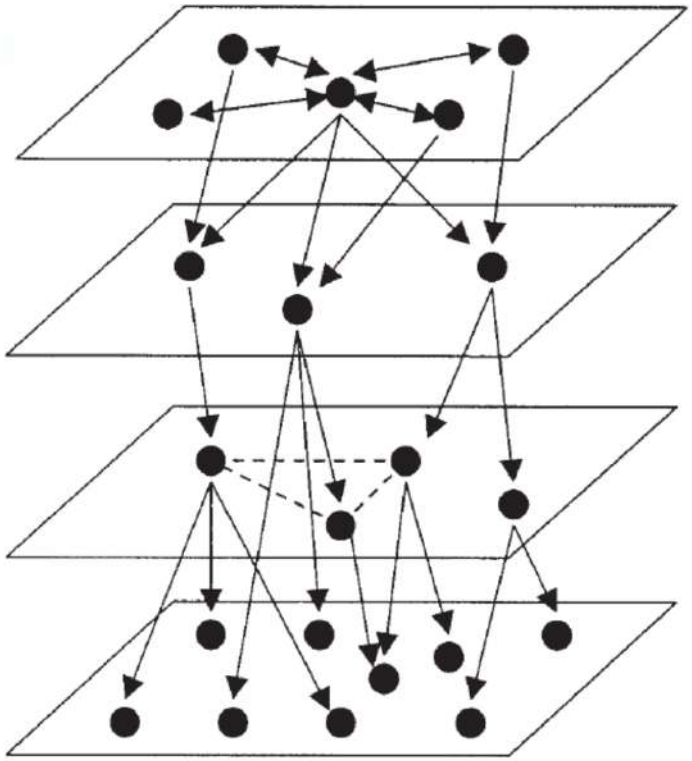


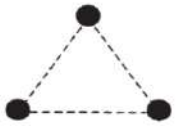
Sequential Focus?




Farmers
44%
41%
21%
15%
Cooperatives
Other Exporters
Auctions
4%
5%
55%
41%
22%
52%
Retail Chains
Wholesalers
55%
45%
85%
15%
Other retailers
Demand in international markets
Vertical Relationships: Competitors and complementors
Horizontal Relationships: Competitors and complementors

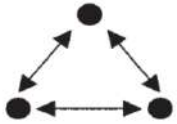
Netchain (Lazzarini, Chaddad, Cook, et al, 2001)





(a) *Pooled*

(b) *Sequential*



(c) *Reciprocal*

Control and ownership/networked systems

Data owned by those that create it?

Data sharing and Open data?

Should we consider data cooperatives?

Cooperatives are already "networked" systems that function on value creation: reduce transaction costs, facilitate knowledge transfer, exchange of resources..

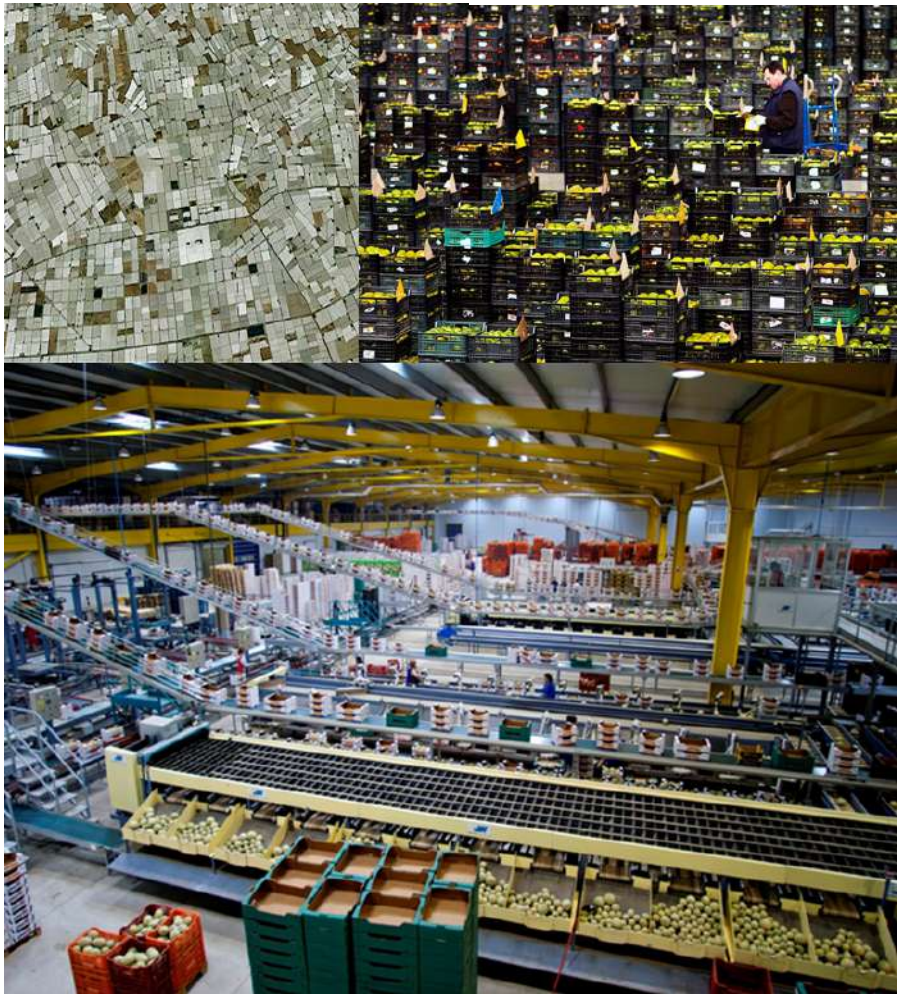
Data "silos" don´t add value-data coop potential for adding value very high

Value chains to value networks in the context of ecosystems

The value differs for different stakeholders

ECONOMIC IMPACT

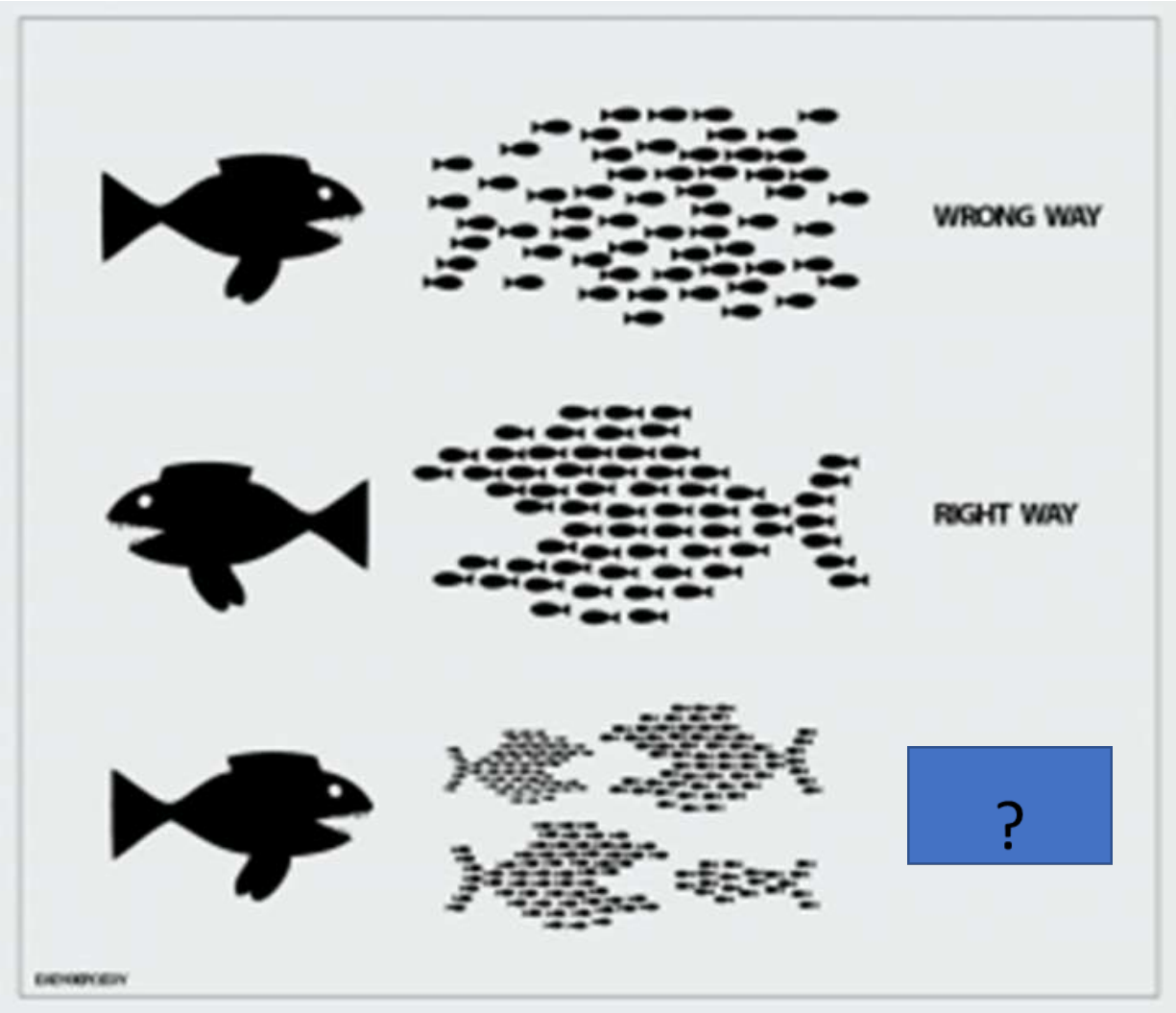
- **Better coordination of currently atomised 30,000 hectares of mid-tech plastic Mediterranean greenhouses**
- **Improve knowledge and supply chain management efficiencies**
- **Decrease in inputs energy, fertiliser and water use (e.g. cost of inputs)**
- **Decrease in food waste**
- **Increase production and turnover from current level of 3 million or more tons and 2 billion Euros**
- **Increase export price and volume**



SOCIAL/ENVIRONMENTAL IMPACT

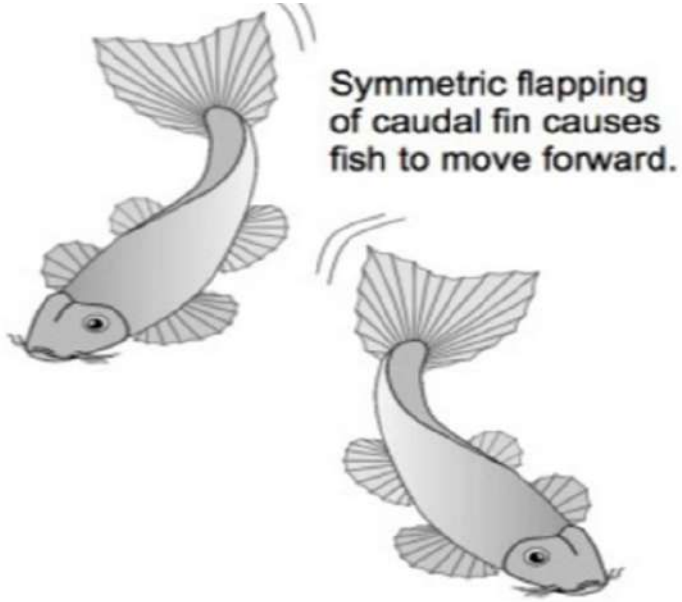
- **Resiliency for family farming model and SMEs**
- **Reduction of pesticides use and improved water and energy use efficiencies**
- **Reduction of underground water contamination**
- **Reduction of food waste (planned production/improved handling and transport, etc.).**
- **Supply chain actors with better and more complete information and raise consumer awareness of food quality and traceability**

Coordination logic-an honest look…



Research needed-change of logic?

- Impact of digitization
- Inter-organizacional relations
- Economic relations and market incentives
- Coordination mechanisms



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Dr. Cynthia Giagnocavo

Cátedra Coexphal-UAL

Horticulture, Cooperative Studies and Sustainable Development

Department of Economics and Business,

University of Almería

La Cañada de San Urbano s/n**,** 04120 Almería, Spain

cgiagnocavo@ual.es

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2020
INTERNET OF FOOD & FARM

THANKS! // ¡GRACIAS!