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The role of contractualisation and cooperative governance to manage market uncertainty in agricultural commodity markets: empirical evidence from arable, dairy and fruit farming across Europe

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Market-orientated ag. policy

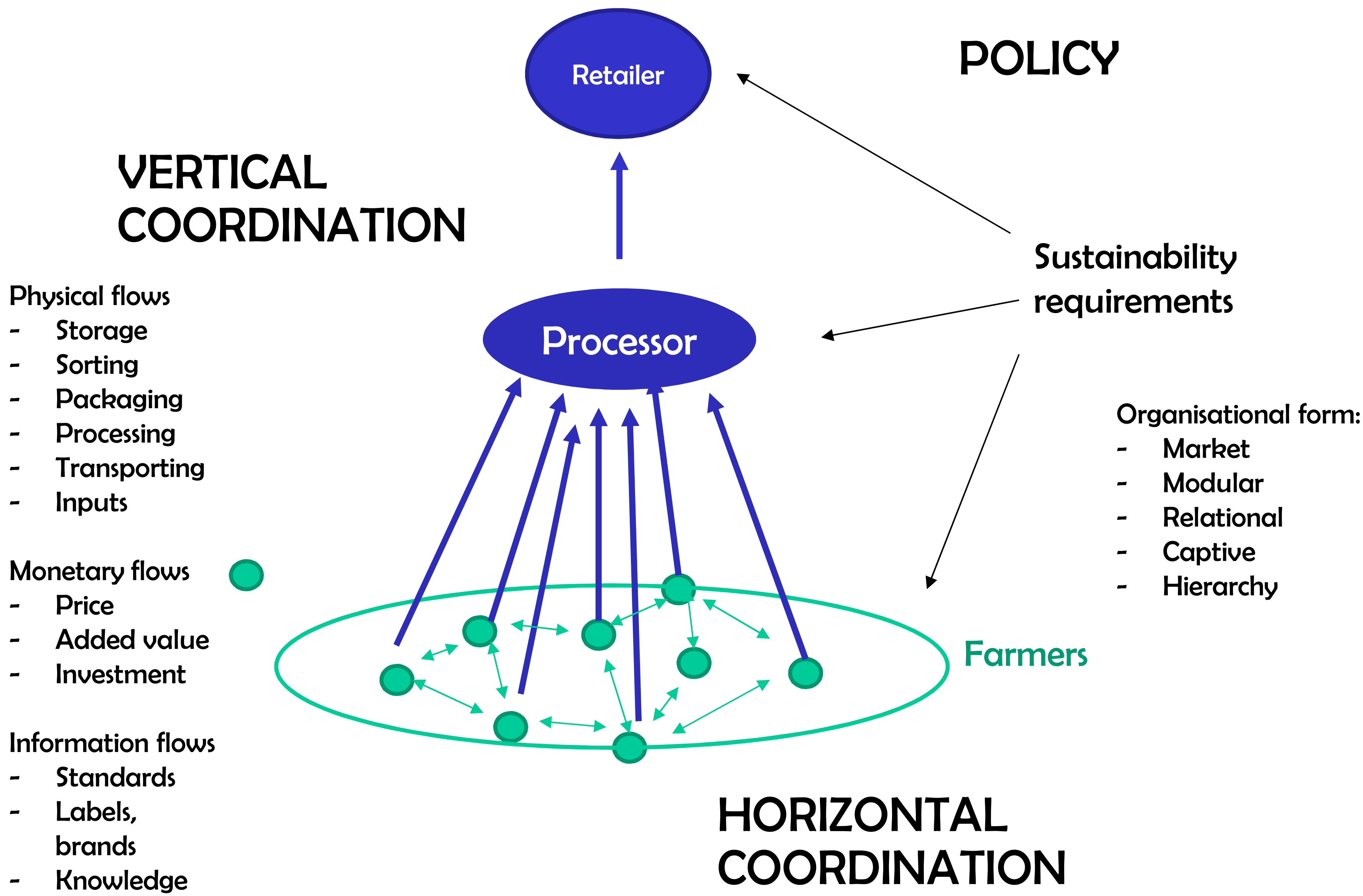
- Milk Package, 2012: need for a 'contractual economy' (Derville and Allaire, 2014)
- Agricultural Markets Taskforce (2016):
  - Ag policy now more market-orientated
  - Farmers more exposed to market instability
  - Information asymmetry
  - Market-orientated policy instruments

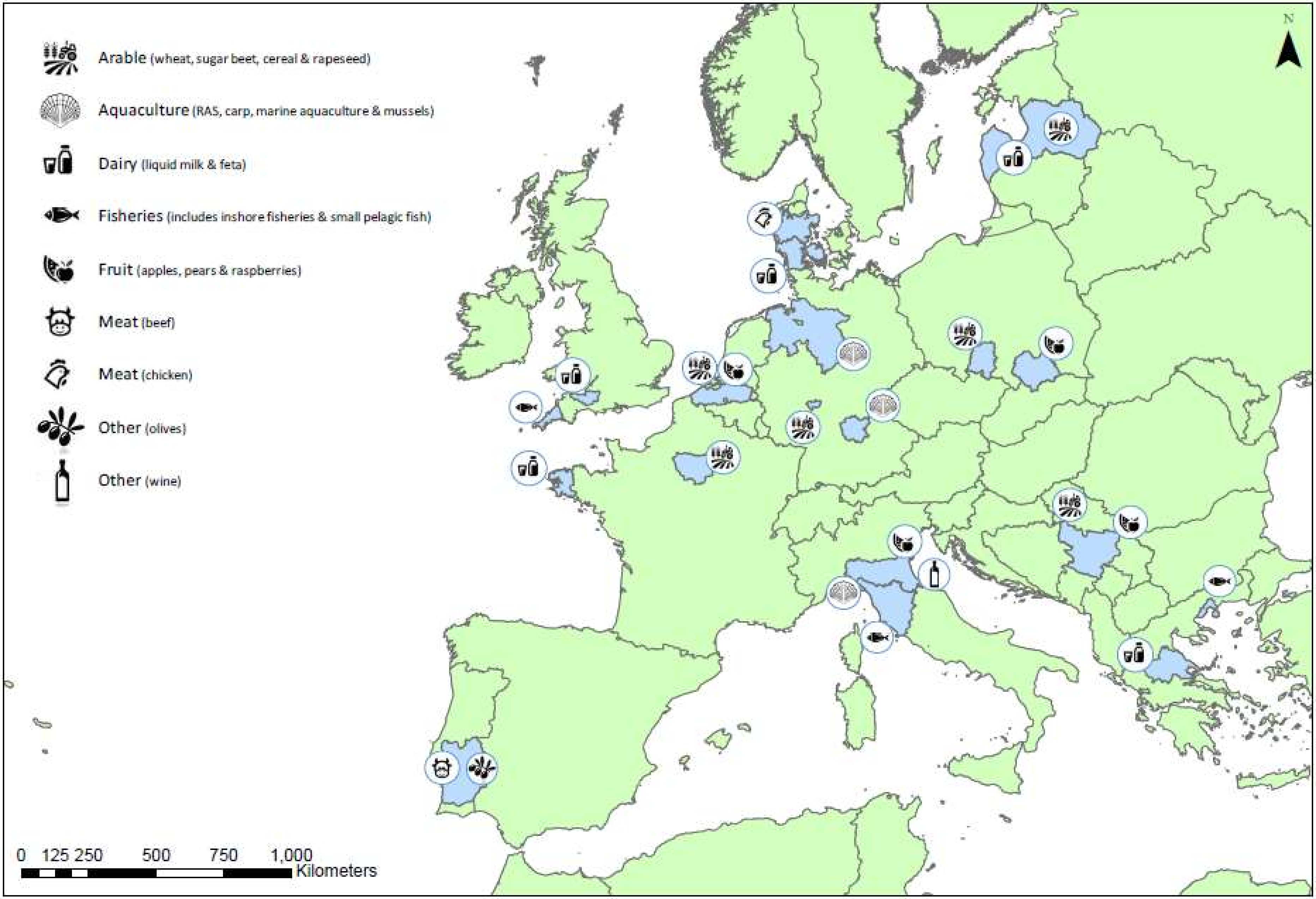
- CAP reform post-2020 (Matthews, 2018) & Post-Brexit Ag. policy (Defra, 2018): manage risk & volatility
- Directive on Unfair Trading Practices in the agricultural & food supply chain (EC, 2019)

Supply chain governance

- Emerging role for SC arrangements (Bonjean and Mathijs, 2016)
- Vertical coordination: different vertical arrangements (Gereffi et al 2005); contractualisation
- Horizontal coordination: co-operatives or POs; producer bargaining power (Veerman et al 2016); 'framework contracts'
- Policy requirements and incentives

Institutional arrangements





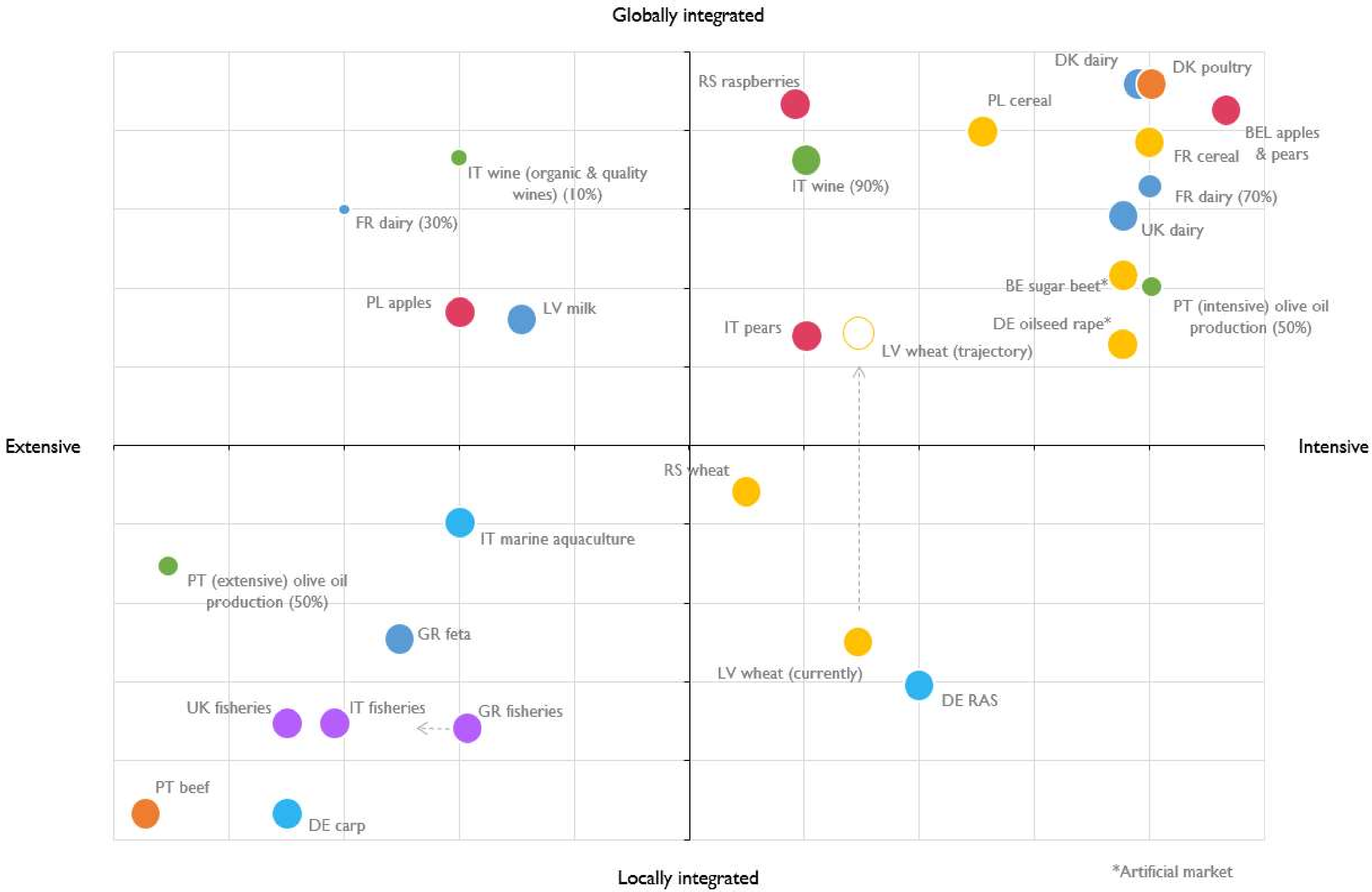
Arable (wheat, sugar beet, cereal & rapeseed)
Aquaculture (RAS, carp, marine aquaculture & mussels)
Dairy (liquid milk & feta)
Fisheries (includes inshore fisheries & small pelagic fish)
Fruit (apples, pears & raspberries)
Meat (beef)
Meat (chicken)
Other (olives)
Other (wine)
N
0 125 250 500 750 1,000
Kilometers

Research Methods

- *Review of market and regulatory conditions* (Desk review, media analysis, 10-15 semi-structured interviews per region).

- *Farmer and SC strategies* (Focus groups with primary producers; interviews with farmers/processors; case study workshops; producer survey).

Case studies: production system and level of global integration



Three commodity markets

- Wheat (PL, RSB,LV)
- Cereals (FR)
- Sugarbeet (BE)
- Oilseed rape (GE)

Arable crops

- Milk (LV, UK, FR, DK)

Dairy

- Apples (PL)
- Pears (IT)
- Apples and pears (BE)

Fruits

Three commodity markets: producer survey

EU MS	Arable	Milk	Fruits	Total by EU MS
Belgium	182	0	137	**319**
Denmark	0	82	0	**82**
France	139	100	0	**239**
Germany	43	0	0	**43**
Italy	0	0	98	**98**
Poland	198	0	200	**398**
Serbia	140	0	0	**140**
England	0	200	0	**200**
Latvia	134	142	0	**276**
Total by commodity	**836**	**524**	**435**	**1795**

Typology of sales arrangements

	Collective sales arrangement		Individual sales arrangement	
	Horizontal market	**Horizontal exclusive**	**Vertical market**	**Vertical stable**
Arrangements' characteristics	• High flexibility • Market oriented • More likely to be large farms • Bears less number costs • Less services and no assistance • Payment after delivery	• Restricted contracts • Stable and extendable • Variable price based on quantity or quality • More likely to be small farms • More commitments • Bears more number of costs • More services and assistance • Regular payments during production	• Flexible • Market oriented • More likely to be small farms • Bears less number of costs • Less services and no assistance • Payment after delivery	• Flexible • Variable price based on quantity or quality • More likely to be large farms • Bears more number of costs • More services and assistance • Regular payments during production

- No penalties on quantity delivered
- Variable price based on market price

Distribution of classes among sectors & countries

		Arable	Dairy	Fruits	**Total**	**%**
Collective	**Horizontal market**	280	147	119	**546**	**32.14%**
	Horizontal exclusive	21	164	159	**344**	**20.25%**
Individual	**Vertical market**	192	10	203	**405**	**23.84%**
	Vertical stable	141	203	60	**404**	**23.78%**
	Total	**634**	**524**	**541**	**1,699**	**100%**

	Belgium	Denmark	France		Germany	Italy	Latvia		Poland		Serbia		UK
	Fruits	Dairy	Arable	Dairy	Arable	Fruits	Arable	Dairy	Arable	Fruits	Arable	Fruits	Dairy
Horizontal market	17	0	104	58	26	4	38	52	25	74	87	24	37
Horizontal exclusive	99	76	5	29	0	40	4	13	0	20	12	0	46
Vertical market	0	0	9	6	15	38	21	3	127	94	20	71	1
Vertical stable	0	3	21	10	2	16	53	74	44	8	21	36	116
	116	**79**	**139**	**103**	**43**	**98**	**116**	**142**	**196**	**196**	**140**	**131**	**200**

Examples of sales arrangements

- Horizontal market

Association of Belgian Horticultural Auctions (VBT):
Agency DPO (Dairy Crest Direct, UK)

- Horizontal exclusive

Dairy co-operatives (Arla – Denmark, the UK);
O-pera (Italy); apples (Poland); wheat (Latvia)

- Vertical market

Arable or fruit spot contracts (small wheat farmers, Opolskie, Poland)

- Vertical stable

Forward contracts (arable);
Supermarket- and processor- aligned contracts (dairy, UK and France)

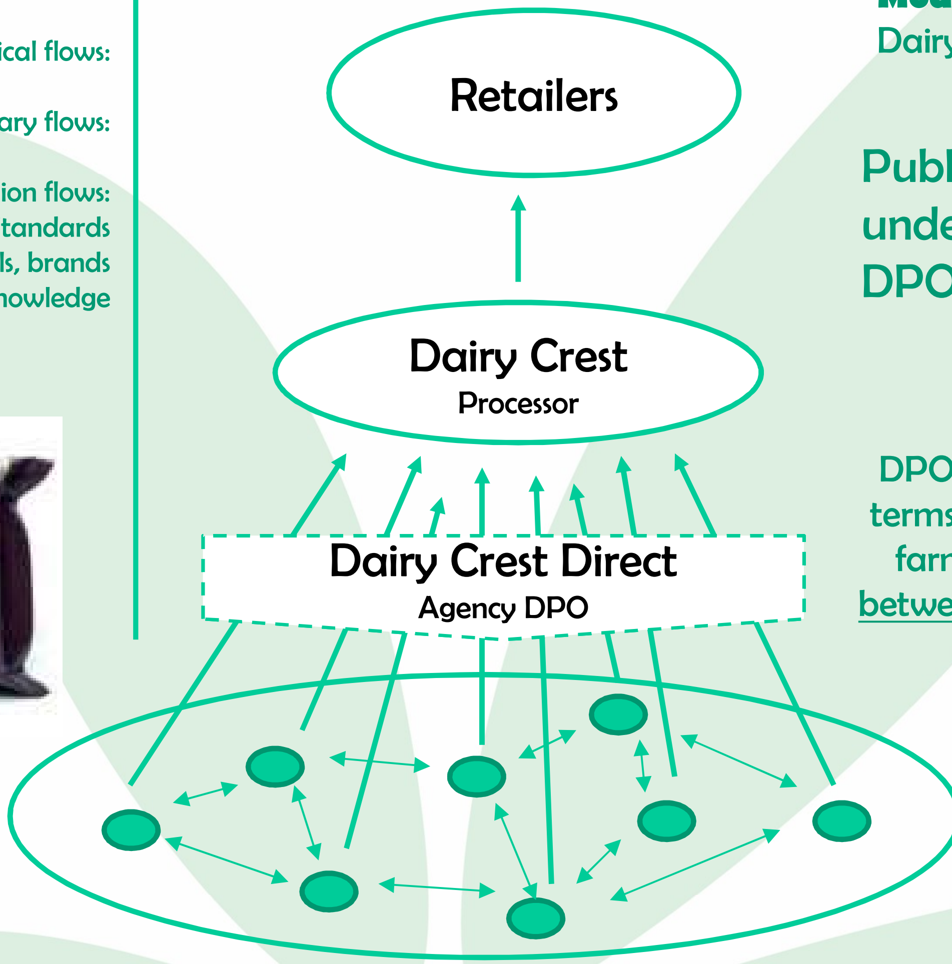
Vertical coordination

Physical flows:

Monetary flows:

Information flows:
- Standards
- Labels, brands
- Knowledge

360 farmers



Value chain types (Gerrefi et al.)

- **Modular:** Farmers make products to Dairy Crest's specifications.

Public intervention underpinning legal status of DPOs

DPO negotiates prices and contract terms with the processor on behalf of farmers, but the <u>contract remains between the farmer and the processor</u>

3 directors

8 forum members

360 farmer members

Horizontal cooperation: Moderate-high organisation via DPO

Information flows (*between* farmers within the DPO)

Multinomial logit – Farmer perceptions

	1	2	3	4
How satisfied are you with this sale agreement?	-0.043	base outcome	0.066	0.022
	(0.091)		(0.106)	(0.100)
Do not have any alternative options to sell my products	-0.066		-0.018	-0.171**
	(0.061)		(0.074)	(0.067)
This sale agreement provides higher prices	-0.119		-0.035	0.053
	(0.081)		(0.096)	(0.087)
This sale agreement provides more stable prices from year to year	-0.340***		-0.712***	-0.323***
	(0.082)		(0.099)	(0.089)
This sale agreement provides more possibilities for negotiating prices	0.330***		0.798***	0.314***
	(0.072)		(0.087)	(0.077)
There are delays in the payments	0.268***		0.476***	0.260***
	(0.081)		(0.091)	(0.091)
The costs associated with this sale agreement are too high	-0.186**		-0.611***	-0.429***
	(0.077)		(0.096)	(0.089)
The production/quality standards required are too restrictive	-0.054		-0.038	-0.174**
	(0.075)		(0.089)	(0.084)
This sales arranegment supports enviromental sustainability	-0.063		-0.250***	0.229**
	(0.082)		(0.094)	(0.091)
This sales arranegment supports societal sustainability	-0.088		-0.434***	-0.693***
	(0.115)		(0.130)	(0.122)
This sales arrangement supports economic sustainability	0.298***		0.399***	0.409***
	(0.104)		(0.121)	(0.116)
constant	1.016*		1.666**	1.906***
	(0.610)		(0.684)	(0.658)

Sales arrangements & farmer perceptions

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Farmers' perceptions	• Moderately stable prices • Relatively high costs • Negotiable pricing • Second least economically sustainable	• Most stable prices • Highest costs • Least negotiable pricing • Least economically sustainable	• Least stable prices • Lowest costs • Highly negotiable pricing • Highest economically sustainable	• Moderately stable prices • Relatively low costs • Negotiable pricing • Second highest economically sustainable

Conclusion

- Changing regulatory and market dynamic re agri-food economies (Veerman et al, 2016); conceptualised as IAs (cf. Gereffi et al, 2005)
- Role of contractualisation (vertical) and cooperation (horizontal) re supply chain governance.
- Understanding structural specificity important to explain arrangements across sectors e.g. dairy.
- Understanding farmer and buyer relationships informs the transfer of risks within the supply chain.
- Need to account for IA diversification of ag. products when implementing the new UTP directive (EC, 2019)

Thank you for your attention

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