Value chains middlemen's roles in the market gardeners' crop planning: which impact on farmers adaptive capacity?

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IFSA Congress Trapani

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Context

Fresh vegetable systems

- Features
  - Fresh products (unprocessed)
  - Small surfaces (<50ha)
  - Manual
  - Not in rotation with arable crops

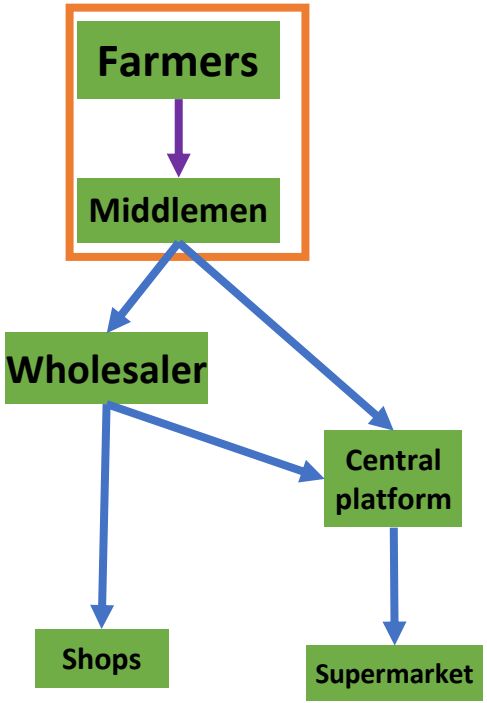
- Specificity
  - Perishable and seasonal (de Raymond et al., 2013)
    - ➢ Tight production timing
  - Large number of potential crops

Context

Fresh vegetable long value chain

- Middlemen
  - value chain actors who buy production directly to farmers, and are involved in crop planning (Tordjman et al., 2005)
  - "*convert a production **dispersed and fluctuating** into a **concentrated and steady** supply*" (Nozières-Petit 2014, p.125)

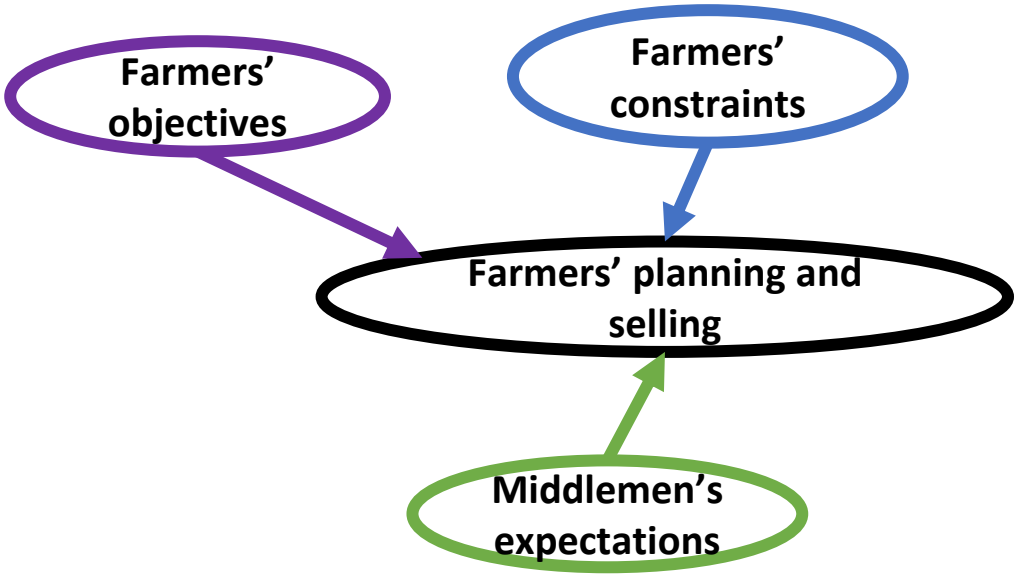
➢ Planning coordinated between farmers and middlemen



Non exhaustive
(Adapted from Levet et Hutin 2019)

Research question

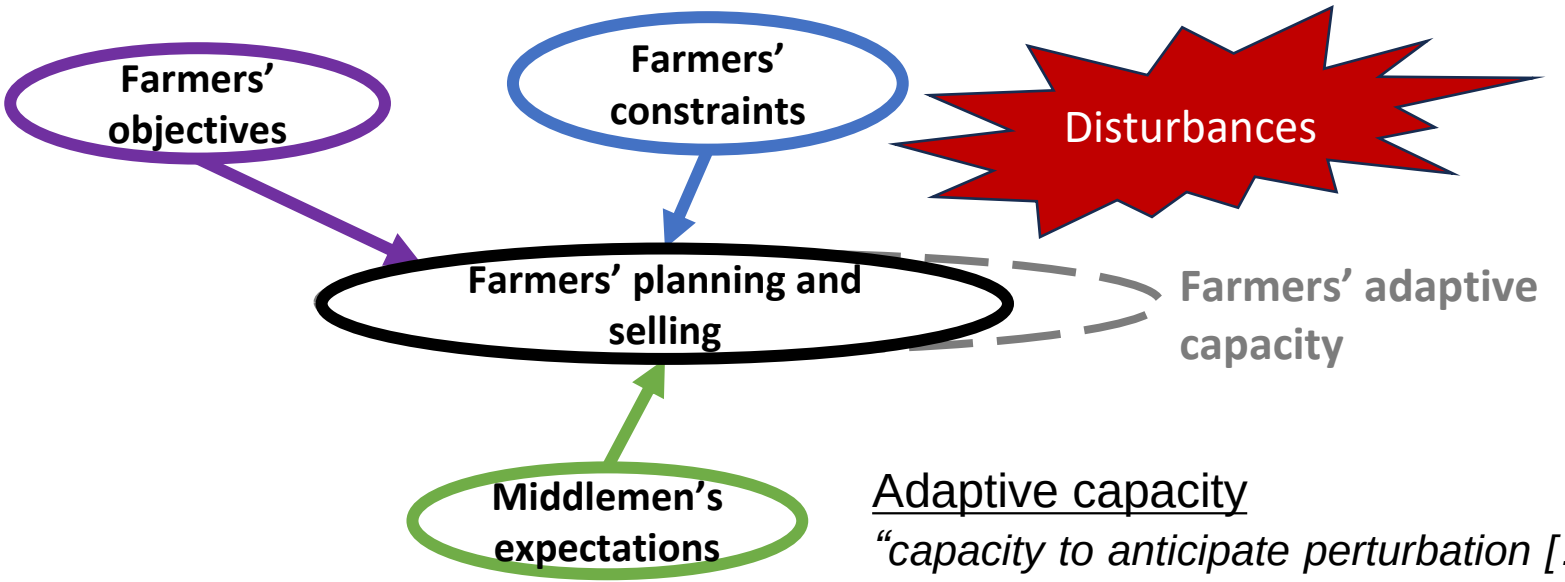
Farmers planning and selling practices



(Navarrete & Le Bail, 2007) : Agronomic, Strategic and organisational factors

Research question

Farmers adaptive capacity



Adaptive capacity

"capacity to anticipate perturbation […]; to design and implement strategies so as not to be harmed by those perturbations; and to maintain system function, structure, identity, and feedback"
(Van der Lee et al., 2022, p.3).

Research question

- **To what extent farmers adapt their crop planning to face a context of increasing disturbances ?**

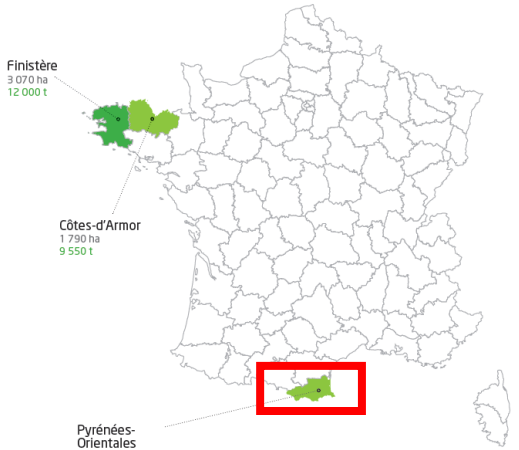
Material and Methods

Method

- Diagnosis of uses (Cerf et al., 2012)
  - Understanding the diversity of ways to address an issue in a concrete situation of use
  - Diagnosis of crop planning
    - ➢ How farmers and middlemen plan production
    - ➢ Which disturbances are faced
    - ➢ How farmers adapt their crop planning to disturbances

- Case study: Roussillon Plain, France
  - One of main french vegetable production basin
  - Historically oriented on long value chain

Artichoke 2018



(Avelin, 2020)

Material and Methods

Semi-structured interviews

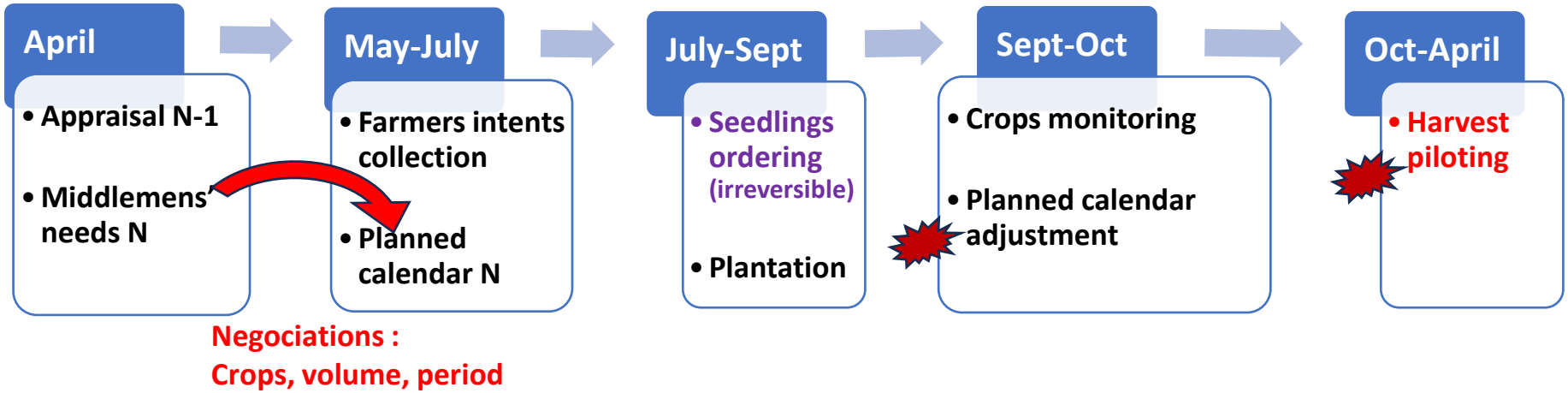
- Snowball sampling method (Parker et al., 2019)
  - ➢ Diversity of situations
  - ➢ Symetric viewpoints of farmers and middlemen
  - ➢ 18 farmers, 6 middlemen and 1 advisors*
- Analysis
  - Themes inductively identified
  - Answers compared and linked to farmers/middlemen features

Type of actor	Organic/ conventional	Size	Number of vegetable crops
Farmers	Organic : **9**	<5 ha : **8**	≤3 crops : **5**
	Conventional : **5**	5-9ha : **4**	3-9 crops : **8**
	Mixed : **4**	10-56 ha : **6**	≥ 10 crops : **5**
Middlemen	Organic : **3**	5 farmers: **2**	≤5 crops : **2**
	Conventional : **1**	5-15 farmers: **2**	6-10 crops : **2**
	Mixed : **2**	30-40 farmers: **2**	≥ 10 crops : **2**

* Advisors paid by middlemen to work with farmers for crop planning and monitoring

Coordinated planning procedure

- 2 campaigns
  - *«Spring-summer and Autumn-winter, as in fashion» (M1)*
- Example: Autumn-winter campaign



Adaptive capacity

	Negociations		
	Crops	**Period**	**Volume**
Farmers' constraints and objectives	Equipment Other crops Profitability Know-how	Seasonality Labor peak Price/risk	Labor Land + management units Gross margin
Middlemen's expectations	List of potential crops mainly decided by middlemen	Long and continuous supply	> Bulk threshold < Commercial capacity
Farmers' adaptive capacity	Propose a new crop, if validated by the middleman Find another outlet	Adjust harvest date Hire seasonal workers	Compensate between crops Hire seasonal workers

➢ Divergences between farmers' constraints and objectives and middlemen's expectations may limit farmers' adaptive capacity

Coordinated planning procedure

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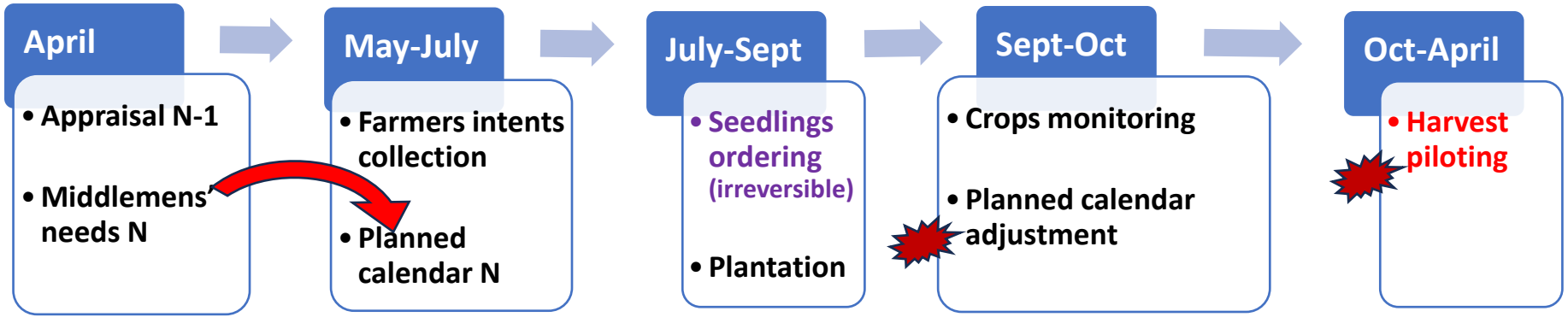

Negociations :
Crops, volume, period

Delay harvest or store (limited by perishability)
Accept lower price
Sell to another middleman
Not harvesting

Other adaptations: If not anticipated, implemented on year N+1

➢ Adaptive dynamic is limited by irreversible step of seedlings ordering

Coordinated planning procedure

- 2 campaigns
  - *«Spring-summer and Autumn-winter, as in fashion» (M1)*
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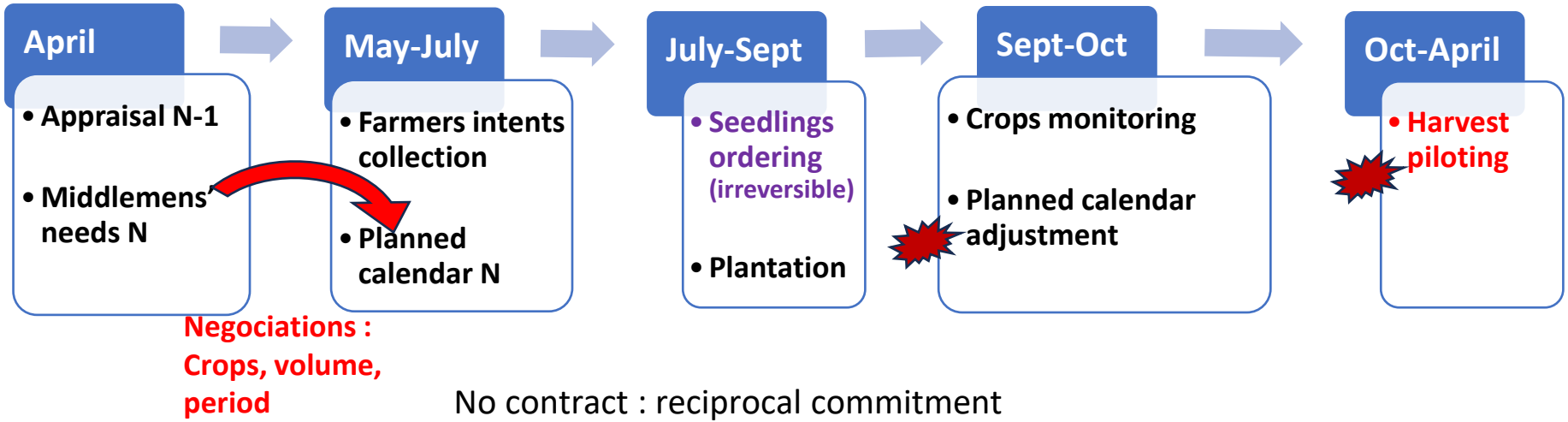


No contract : reciprocal commitment

"We have a moral duty of supply, and they have a moral duty of outlet and price" (F5)

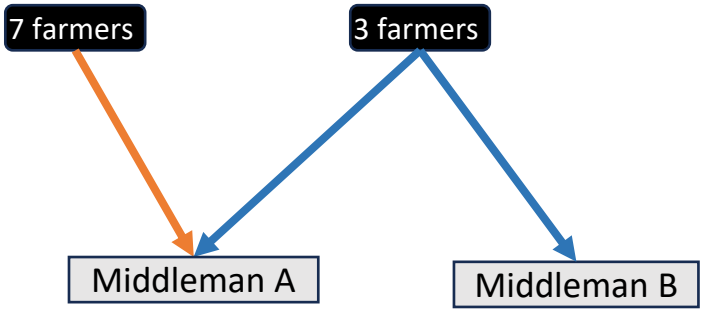
➢ How farmers adapt selling to overproduction?

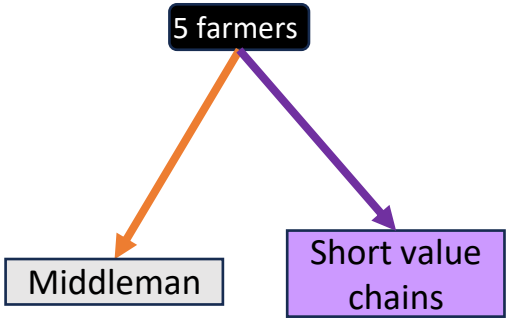
Outlet organization

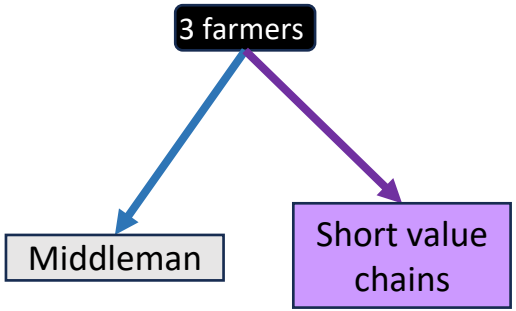
- 3 types of agreements with middlemen

Agreements	Characteristics
1st circle	Planned, reciprocal prioritization
2nd circle	Planned, not prioritized
3rd circle	Not planned

- 4 Planned outlet combination (farmers marketing system)







3rd circle : dynamic, hard to identify

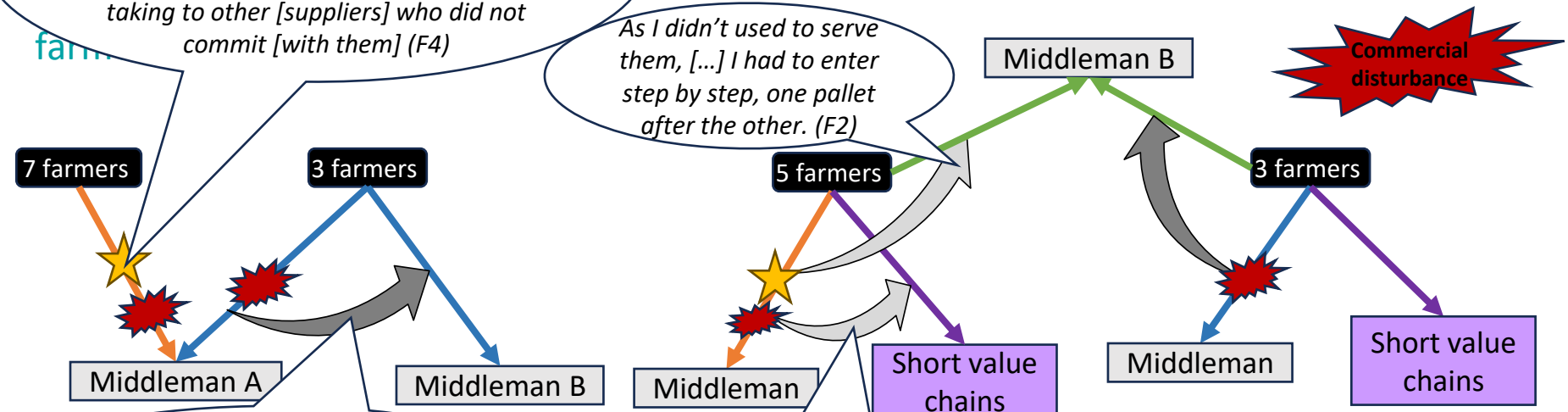
Outlet organization

- 3 types of agreements

Agreements	Characteristics
1st circle	Planned, reciprocal prioritization
2nd circle	Planned, not prioritized
3rd circle	Not planned

If the period where it is stuck is too long, I'm glad to commit with [M1], I tell them […] I'll bring you 500kg everyday next week, and they say OK, so they stop taking to other [suppliers] who did not commit [with them] (F4)

As I didn't used to serve them, […] I had to enter step by step, one pallet after the other. (F2)



They can have a market completely stuck. And in that case, if you managed to have two customers, one is getting a bit better than the other. And you can pass some [of your production] (F18)

[the volume of] a retailer it's 200kg. So if you have 60 tons of artichokes on your hands, they won't sell it (F7)

- Agreement with middlemen influence the way farmers face overproduction

Practical implications

- Farmers' adaptive capacity depends on:
  - Constraints (e.g. farm equipment)
  - Objectives (e.g. strategy for marketing system)
  - Coordination with middlemen (e.g. coordinated planning)
  - ➢ Farm typology to better understand differences of adaptive capacity

- Transform agreements between farmers and middlemen?
  - Joint risk-sharing (Scholten & Schilder, 2015)

Theoretical implications

- Collective adaptive capacity?
  - E.g. at supply basin scale (Le Bail & Le Gal, 2011)

- Timing of adaptation
  - ➢ Temporal adaptation dynamic

➢ Broader analysis of resilience
  - ➢ Including robustness and transformability (Meuwissen et al., 2019)
  - ➢ Combining structural and social approaches (Darnhofer et al., 2016)

➢ Focus on other practices than planning
  - ➢ E.g. crop management

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Thank you for your attention !

Questions