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Agroecology and Social Sciences Regulation of Agroecosystems

Agroecology and Law: A Transdisciplinary Dialogue
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Introduction: The problem of sustainable regulation of agroecosystems from a social science perspective

- Two arguments:
  - Agroecology is a multiperspectival approach to study agroecosystems (epistemology)
  - Agroecosystems are self-organising (autopoietic) systems (ontology)
- Consequences for understanding regulation

How to observe an agroecosystem?

Technical system

Agronomic system

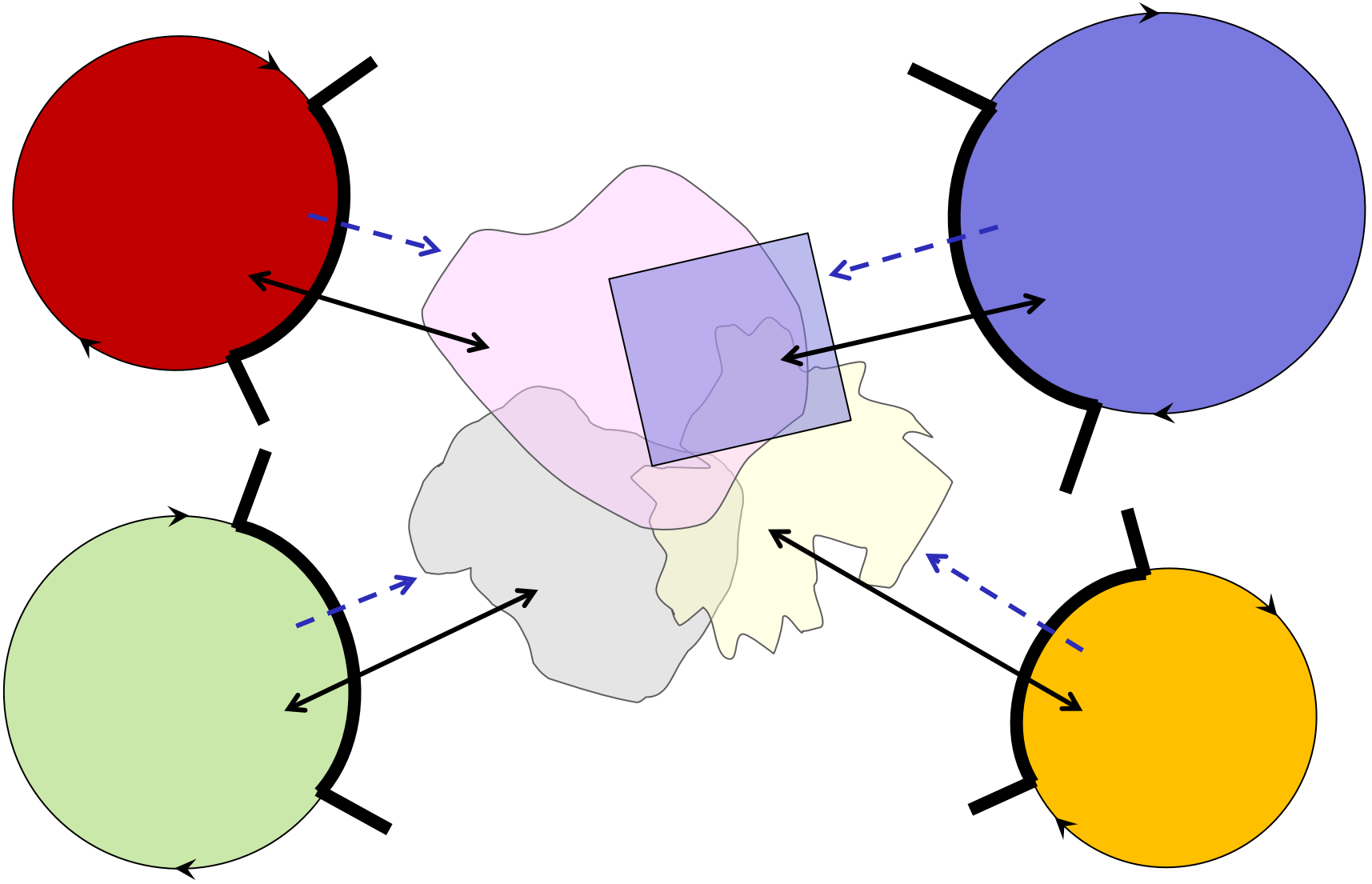
Biological system

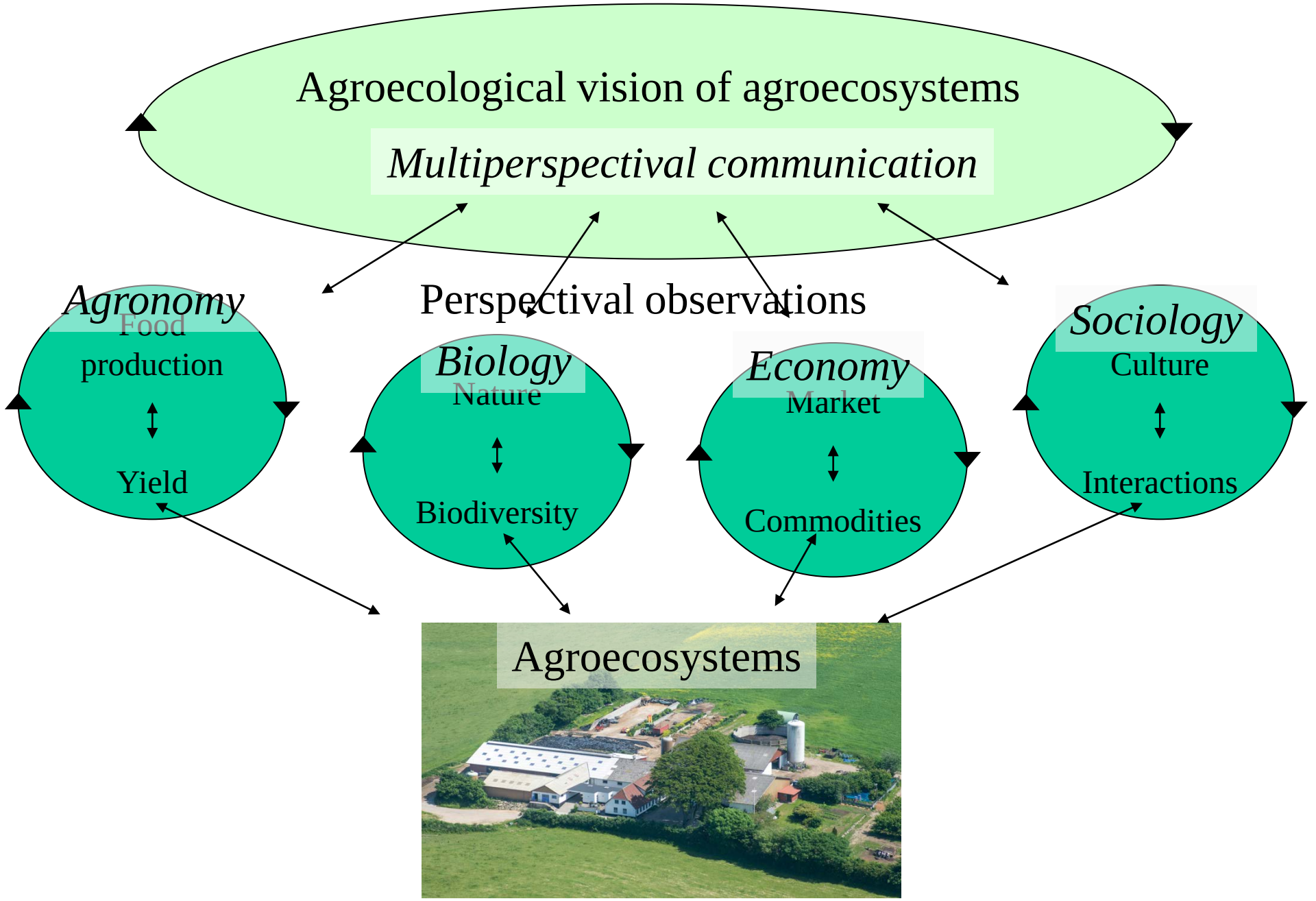

Social system

Economic system

Value at the beginning of the year		Sales	
Purchases	Value(Ksh)	Sales	Value(Ksh)
Goats	12,000	Goats	7,500
Chicken	11,100	Chicken	42,000
Dewormers	1,800	Onions	320,000
Fertilizers	12,300	**Sub total**	**369,500**
Onion seeds	2,500	Value at end of season	--------
Sub-total	**39,700**	Chicken	46,800
Others:	------	Goats	18,000
Salaries	86,400	Onions	40,000
Interest	7,050	**Sub total**	**104,800**
Sub total	**93,450**		
Grand total	133,150	Grand total	474,300
Farmers profit at the end of the accounting season = **341,150** (474,300- 133,150)			

An agroecological challenge !
→ a multiperspectivist approach




Agroecological vision of agroecosystems
Multiperspectival communication
Perspectival observations
Agronomy
Food production
Yield
Biology
Nature
Biodiversity
Economy
Market
Commodities
Sociology
Culture
Interactions
Agroecosystems

Agroecology as a multiperspectival platform to observe agroecosystems

- But how can we understand an agroecosystem as a system when no perspectives can observe it as an agroecosystem?

Local infrastructure

Chemicals

Legislations

Subsidies

Environmental problems

Friends

Fertilisers

Rural actors

Buildings

Family

Soil

Other farms

Computers

Norms

Micro organism

Consultants

Machine pool

Managers

Feed schedule

Breeds

Knowledge

Cows

Values

Research

Slaughter house

Machines

Workers

Magazines

Dairies

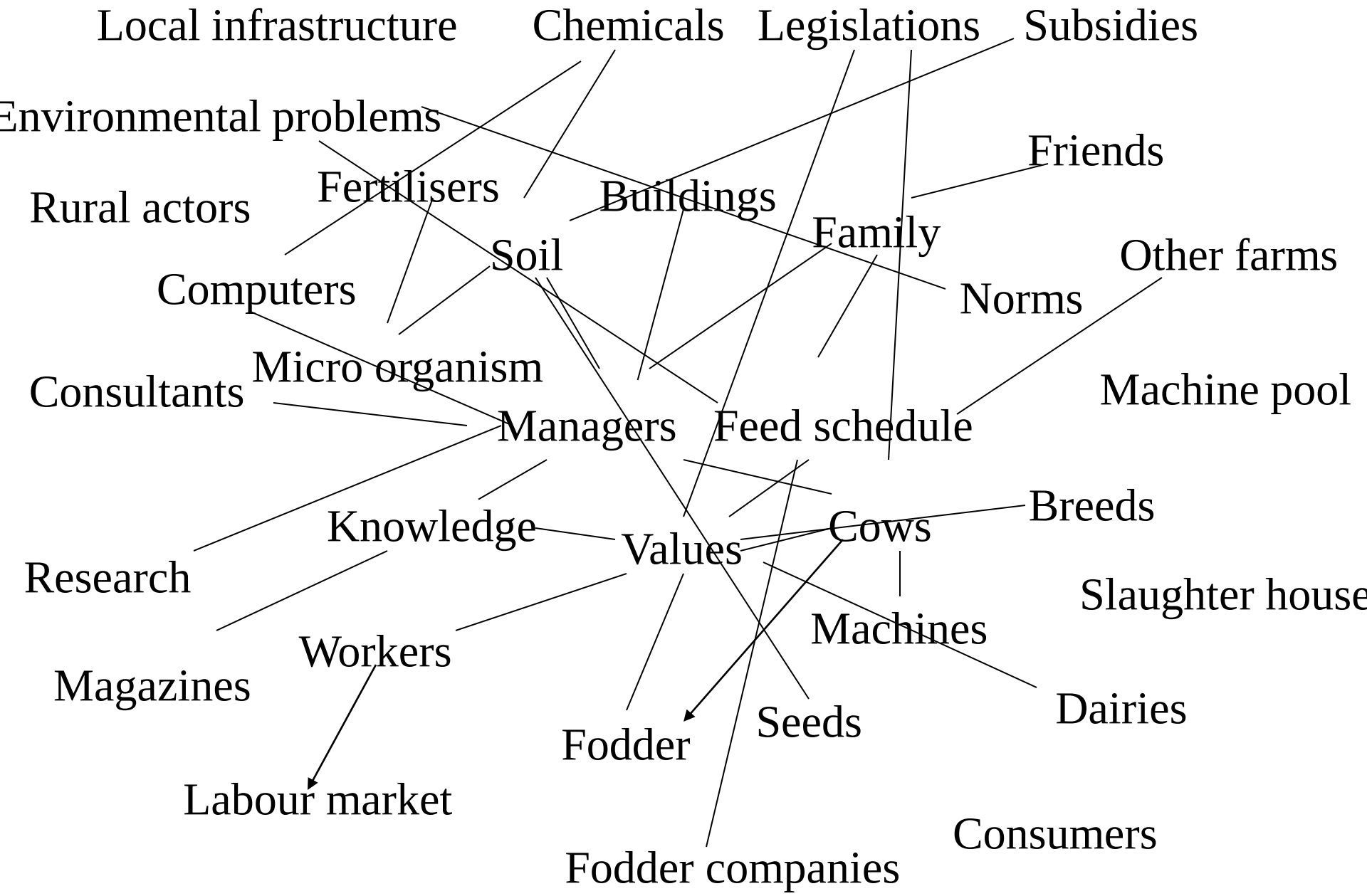
Seeds

Fodder

Labour market

Consumers

Fodder companies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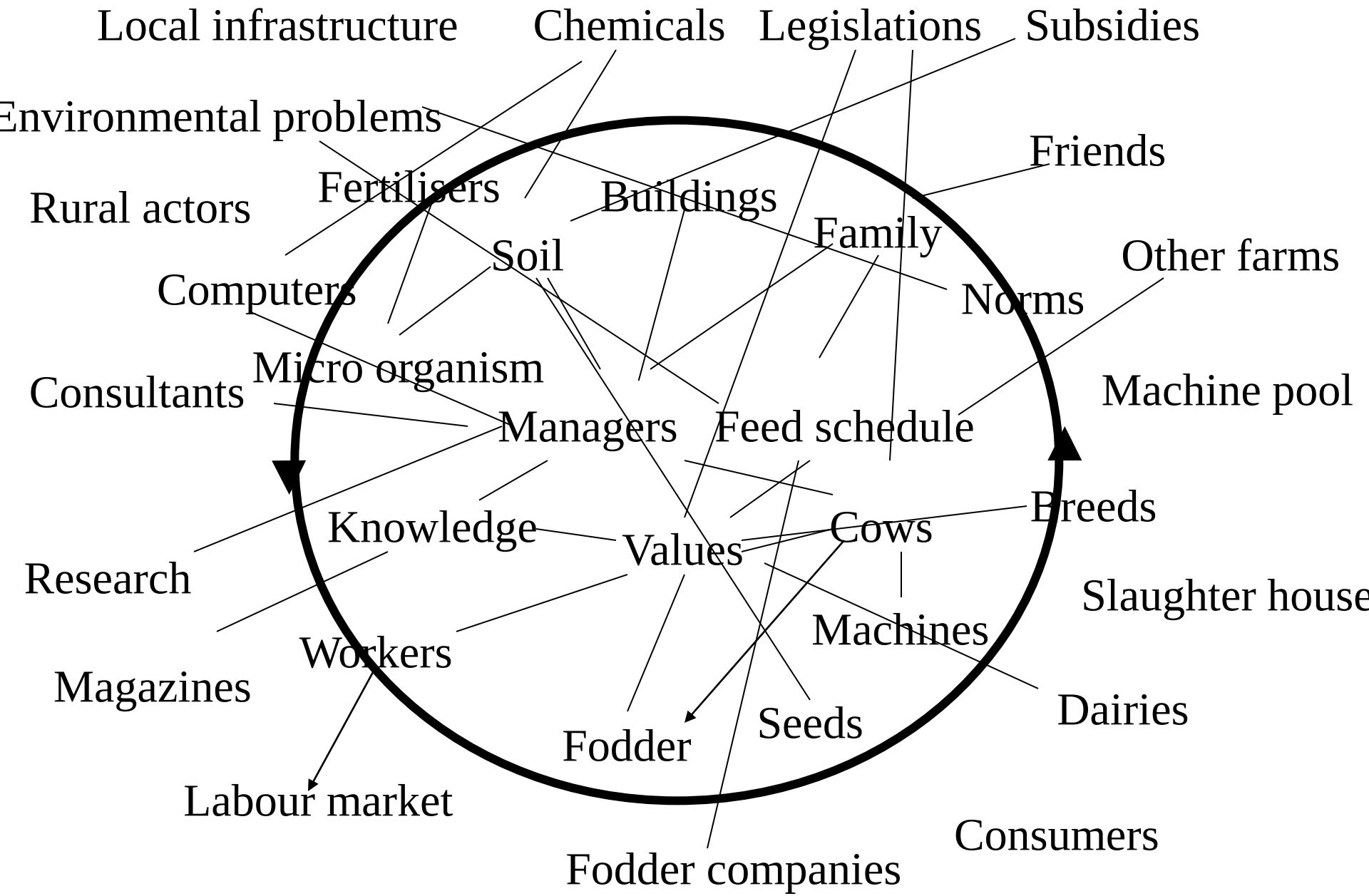
Contingency

- Contingency: also possible otherwise
- *The farm as a heterogeneous social system is not only forced to select in the contingency of objects, but also in contingency of the potentiality of each object that is enrolled.* (Noe & Alrøe 2012: 394).
- In any moment of time there is always a surplus of possibilities that forces a selection in order to actualize some of these possibilities.

What is a farm

- As a system (Niklas Luhmann): a closed organization system reacting to the world on the basis of its own distinctions, making use of different codes (economic, legal, bureaucratic, political), stabilizing itself through decisions.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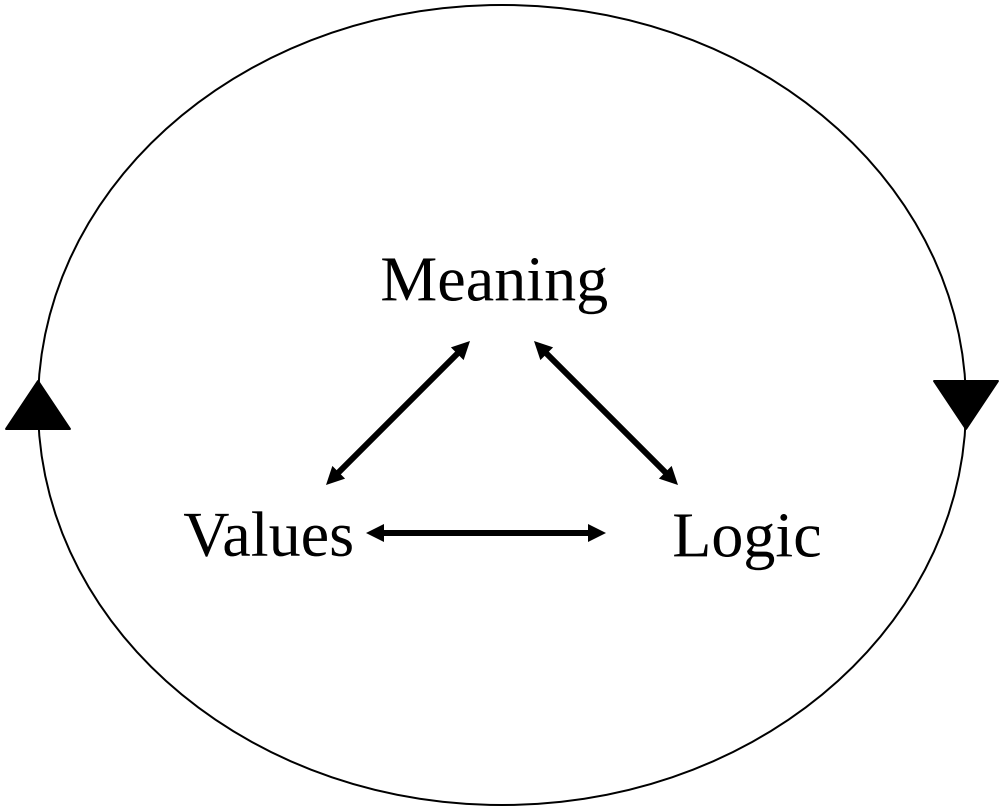
Surplus of possibilities opens up for a diversity of farming strategies and styles



Consequences for Regulation

Forms of Regulation	Examples of measures	System reactions		Pros	Cons
		System logic	System values		
Legal injunction / prohibition	Green catch crops	The effect of the catch crop is very dependent on how the system is organised. If the rationale is not shared, the reaction can be contrary	Systems values plays only an indirect role	Possible to control	The real effect unknown and the side effect to the system unpredictable
Incitements: Taxes / subsidies	Pesticides tax	The sensitivity to taxes is dependent on both the values and logic of the system		It regulates directly on the target; less disturbance of the autopoiesis of the agroecosystem	High taxes to make all agroecosystems react. Leads to permanent dependence on taxes
Normative: Campaigns / information	Voluntary agreement on pesticide reduction	Will only be a part of the system's logic if it becomes incorporated in the system's values	Sensitivity is very dependent on values, some react very strongly in the intended direction while others react against	Cheap and little control. Co-constructive with the autopoiesis of the systems	Save the saved, agroecosystems that do not share the intention behind the campaign may react contrary

Conclusion 1

- None of these forms of regulation target the agroecosystem as a whole, but only through technical, biological or behavioural regulation (perturbation) of the system based on the underlying understanding of how these subsystems function.

Conclusion 2 (normative)

- Strive as much as possible to use measures that support the autopoiesis of the agroecosystems to obtain the perceived goals of development and regulation, rather than measures that try to destroy or restrict the autopoiesis of the systems by the injunction of specific behaviour or technology.

Conclusions from a social systems theory

- Development of agroecosystems needs to take an understanding of agroecosystems as hybrid self-organising systems as the point of departure.
- A multiperspectival approach (that no possible perspective has access to observe an agroecosystem as a whole) can serve as a useful platform.


Thank you