UNIVERSITEIT GENT

FACULTEIT BIO-INGENIEURSWETENSCHAPPEN

Using a Transaction Cost Framework to analyse nested institutions enhancing public good delivery by agriculture

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Outline

1. Introduction
2. The ‘market’ concept revisited
3. Efficiency of Governance structures for nested institutions
   - Private goods
   - Public goods
4. Conclusion

1. Introduction

Multifunctional and sustainable agriculture:

- changing role of agriculture in society
- increasing demand for other services from farming

Challenge:

- Finding institutions who push agriculture towards this new role in society

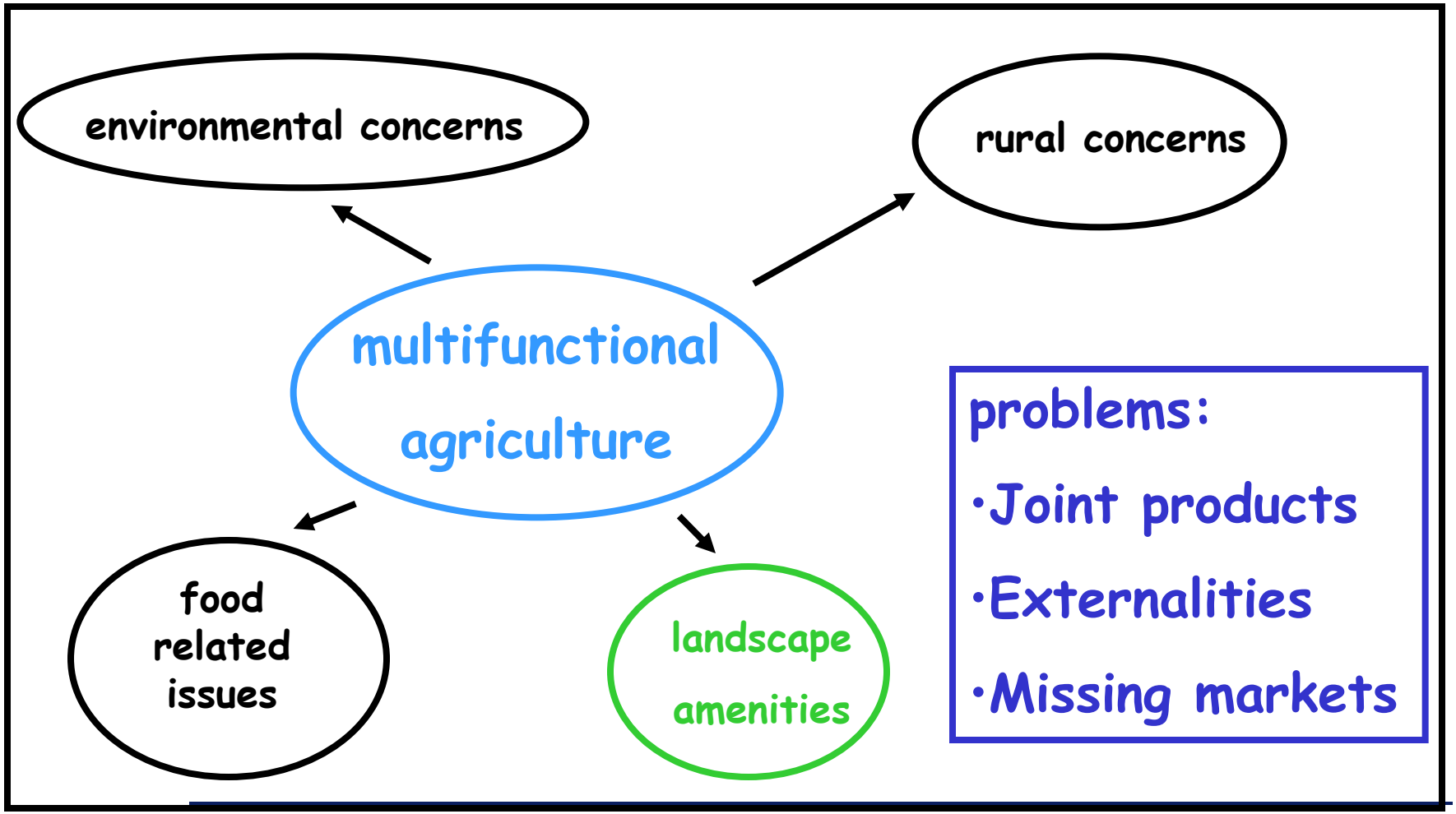
Introduction

*« Analysing the role of political, economic and social institutions for sustainable development requires **new analytical frameworks** to understand and design rules for governing the increasing complex interaction between ecological and social systems of modern societies. »*
(Pradmanabhan and Beckman, 2009)

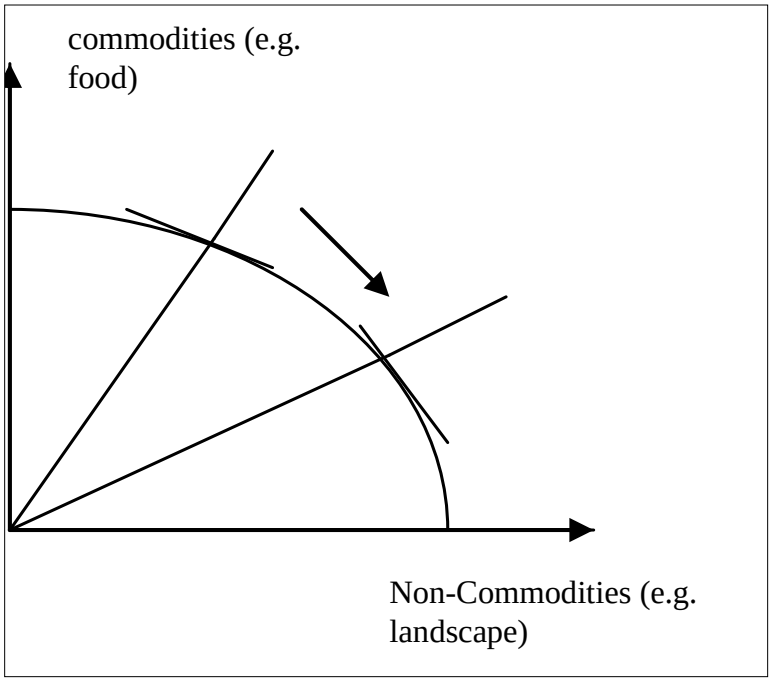
Our approach: applying existing theories on private goods to the supply of public goods

Problem of underprovision of public goods by agriculture

- Agriculture produces jointly commodity and non-commodity products (like landscape, nature, …)
- Some joint products of agriculture are public goods and therefore not remunerated in the market
- Some outcomes are unintended or so called externalities (positive or negative)
- Result: some desired outputs or outcomes are not or unsufficiently supplied and some undesired products are produced in too high quantities


environmental concerns
rural concerns
multifunctional agriculture
food related issues
landscape amenities
problems:
·Joint products
·Externalities
·Missing markets

MF: The fundamental problem



- Price setting of inputs (e.g. labour) and outputs reduces interest in non commodity output
- Distorted or missing markets make that the output bundle does not reflect the desired one
- To correct the failure in provision of non commodities adequate institutions and governance structures are needed

Solution ?

« Finding rules and regulations that integrate all dimensions of sustainability » (Hagedorn, 2002)

⇒ Public good market creation to arrive at more sustainability

⇒ In the case of **agriculture** and natural resource management

⇒ Our hypothesis: **hybrid governance structures** may facilitate the functioning, not only of private, but also of public good markets

2. The market concept revisited

What is a market?

-Public place

-Group or organization

-Sub-division of population

-Interaction between suppliers and buyers

-Specific organizational forms

-Governance structure

Variations = a reflection of diverging analyses *(Ménard)*

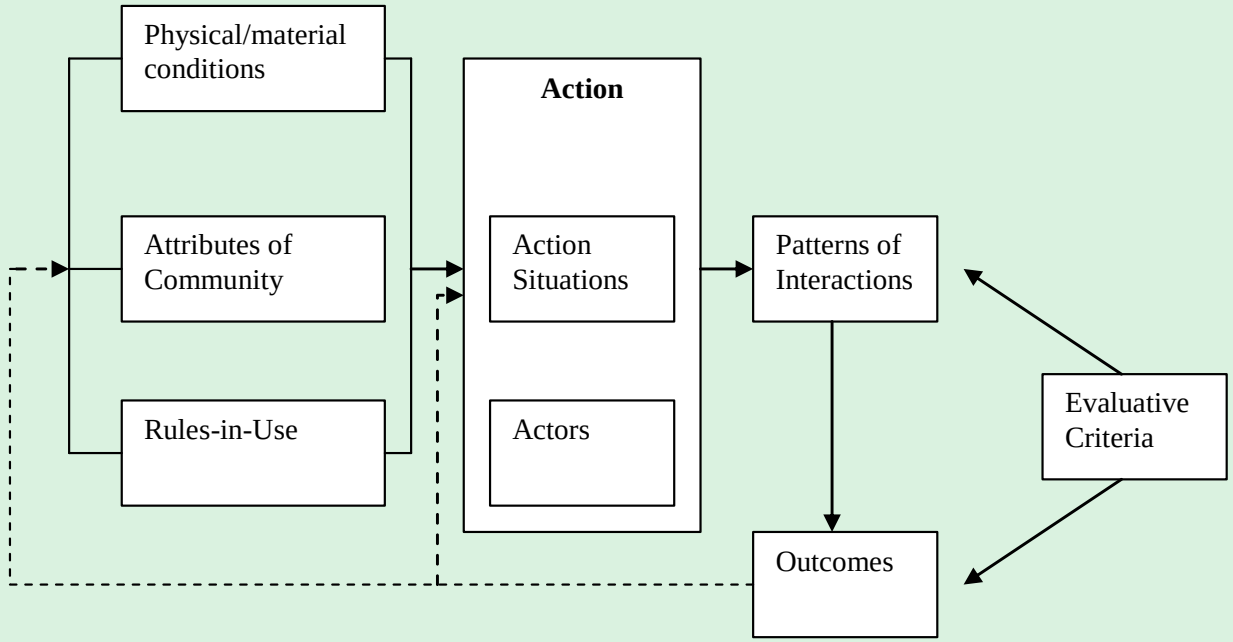
- Neo-classical economics: interaction of supply and demand, without institutions
- New social theories: a specific type of social structure
- New institutional economics: the neo-classical model + institutional constraints + external conditions

=> NIE = markets are institutions that shape the behavior of actors

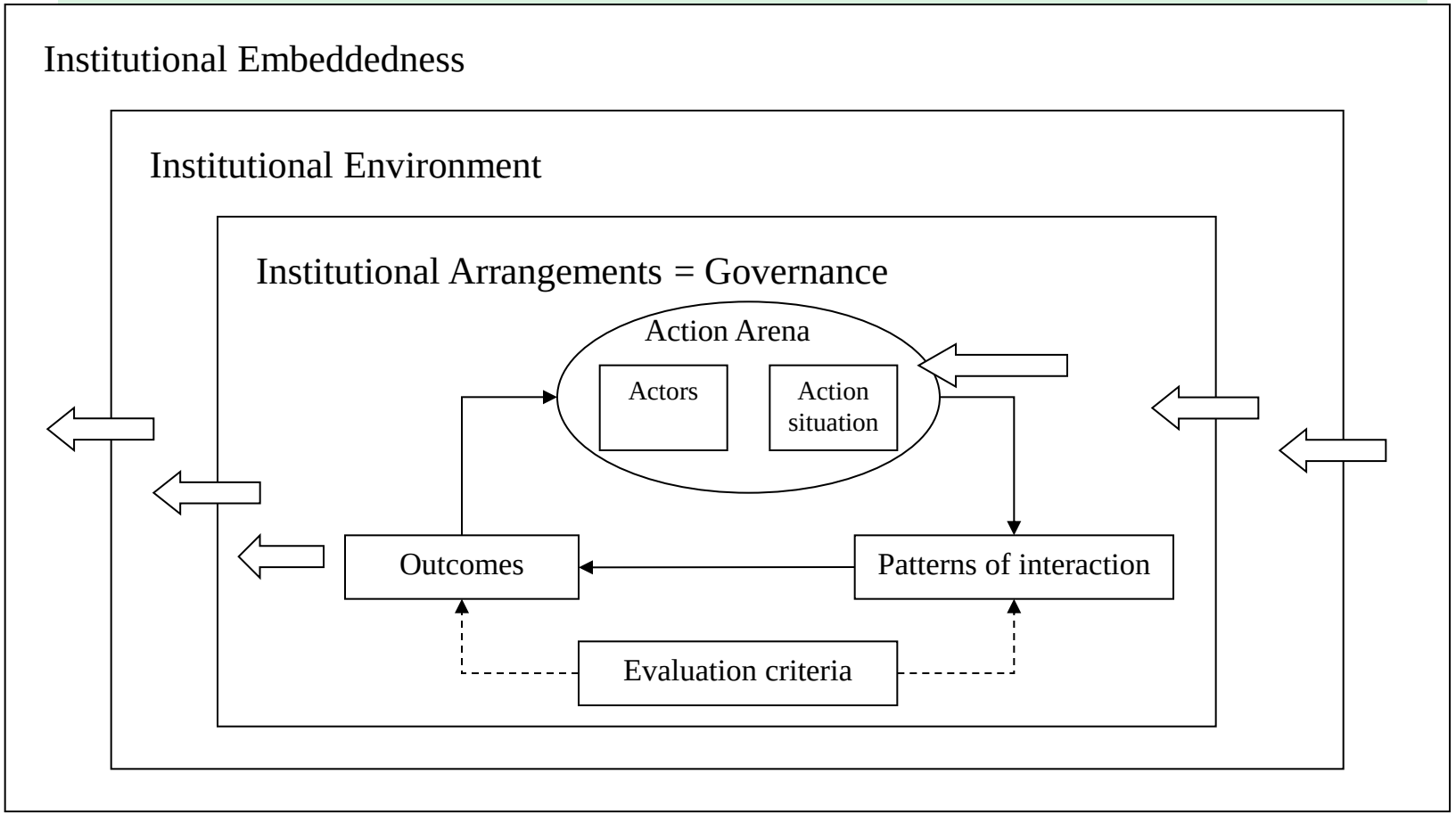
Different levels of institutions *(Williamson)*

Level	Core element
Level 1: Social theory	**Institutional embeddedness:** informal rules, customs, traditions, norms religion
Level 2: Economics of property	**Institutional environment:** formal rules of the game – especi ally property (policy, judiciary, bureaucracy)
Level 3: Transaction costs economics	**Governance:** play of the game – especially contract (aligning governance with transactions)
Level 4: Neo-classical economics	**Resource allocation and employment** (prices and quantities; incentive alignment)

Level 4 in NIE can be described as the action arena *(Ostrom) or the 'action market'*



But this in combination with other levels



Or in other words …

The market is a nested set of institutions, of rules within rules, guiding the interactions and decisions of actors within a certain action arena

⇒The market model is based on networks, on social relations and rules between people

⇒How can this 'market' be efficiently be organized (at governance level) for sustainable agriculture?

3. Efficiency of governance structures for nested institutions (= organization of 'markets'))

Between the actors: transactions take place (e.g. commodity transactions but also non-commodity transactions)

These transactions have costs, depending on

- uncertainty,
- complexity,
- frequency,
- relationship specific assets

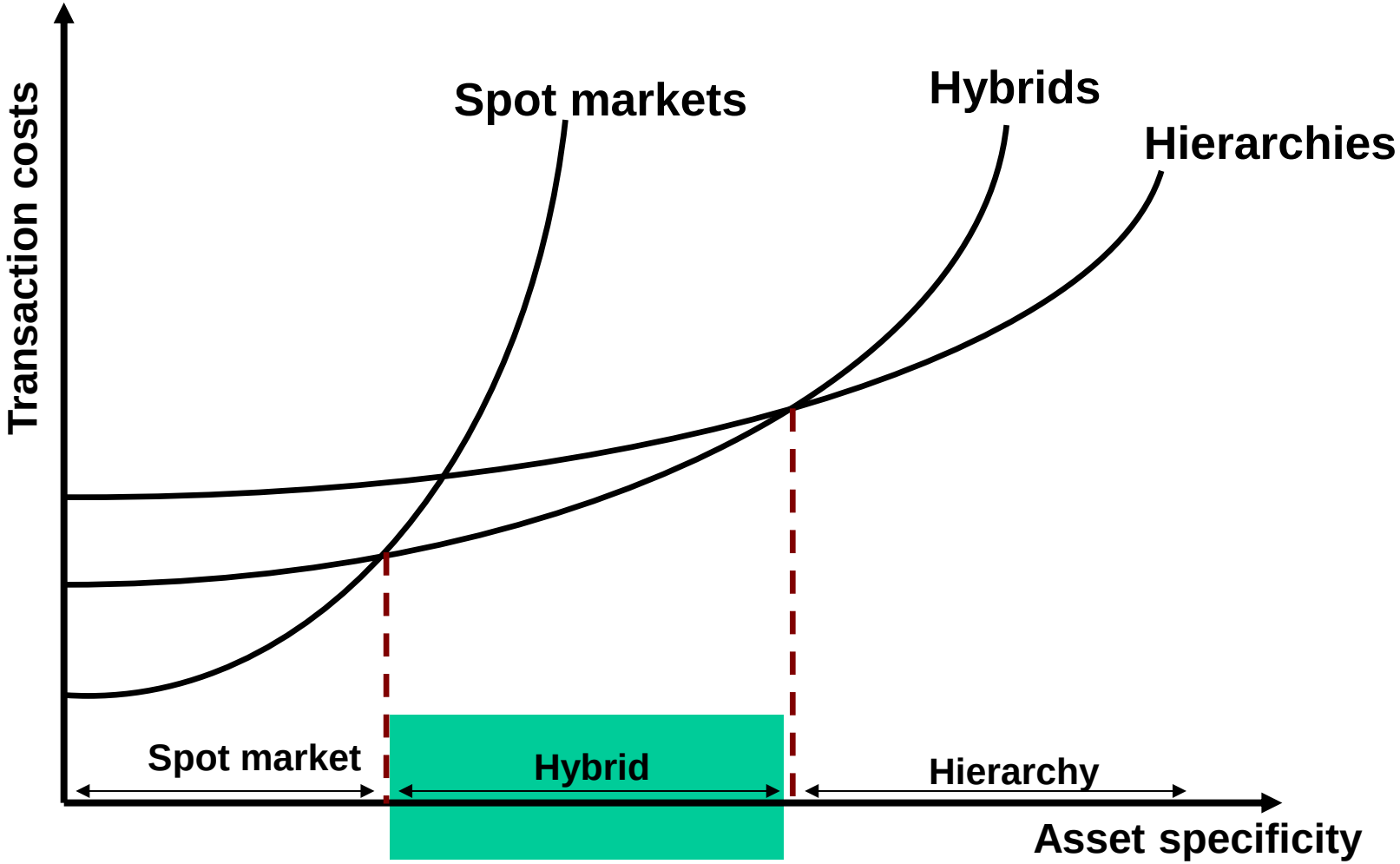
Objective: to develop governance structures that minimises transaction costs

Governance structures

- Governance structures such as contracts, networks, bureaucracy, cooperation or markets are organisational solutions for making institutions effective, i.e. they are necessary for guaranteeing rights and duties and their use in coordinating transactions
- Governance is thus about how the whole system of transactions can be 'managed' in order to obtain desired outcomes
- Best governance is the one that minimizes for a certain outcome the transaction costs
- The nested institutions model implies that transaction cost of a governance structure are both influenced by the institutional environment as the institutional arrangements that emerge

Private Goods governance structures

- Governance structures for private goods vary from spot market *(one time contact between buyer and seller)* over hybrid governance *(ranging from open group forms of governance to formal governance)* to hierarchy *(integration of sellers and buyers in one structure).*
- Depending on transaction characteritics the transaction costs between governance structures will differ
- In reality hybrid governance structures are the rule and spot market and hierarchy the exception

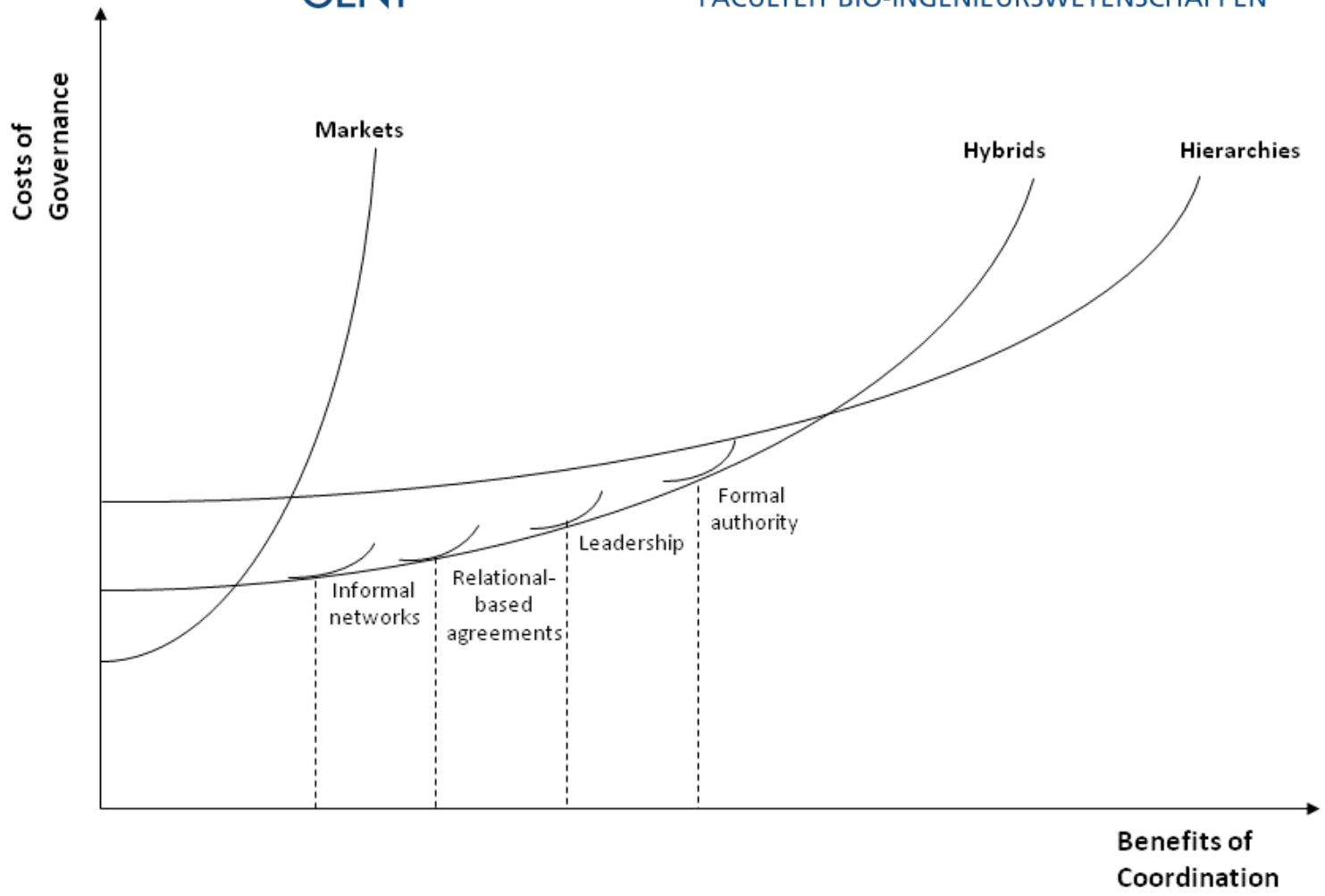

Transaction costs
Spot markets
Hybrids
Hierarchies
Spot market
Hybrid
Hierarchy
Asset specificity

Characteristics of hybrid organisations (Menard)

- Pooling resources: coordinated organisation of some activities, so that key investment decisions must be made jointly while property rights still divided amongst actors
- Relational contracting: in one or another way alignement between partners is contractualised
- Mixture of competition and cooperation among actors and among different governance structures
- Existence of a central coordination unit
- Existence of quasi-rents (incentives to cooperate)

How do you coordinate these hybrids?

1. Using information devices
2. Based on formal contracts
3. Establishment of an internal regulating body (leader)
4. Creating a governing body of its own


Costs of Governance
Markets
Hybrids
Hierarchies
Informal networks
Relational-based agreements
Leadership
Formal authority
Benefits of Coordination

Application to Public Goods

Difference between private and public good markets:

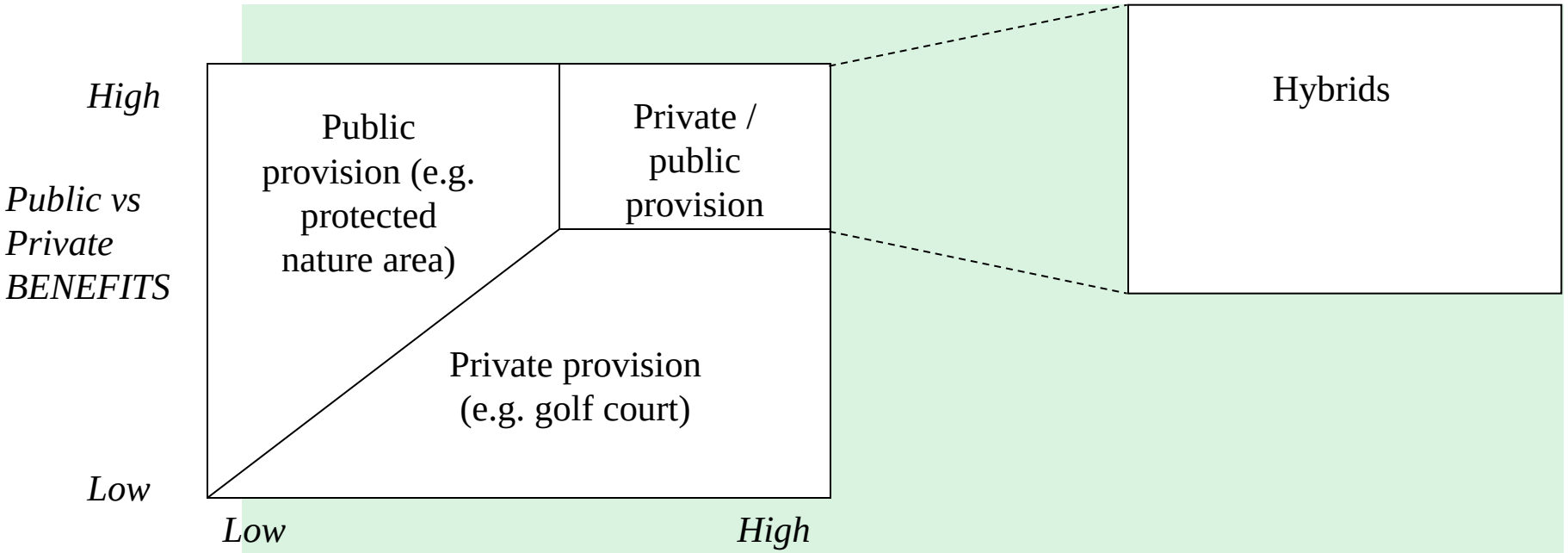
- Existence of externalities
- Position of public actors

=> Action arena in which public (body) demands goods/services while private agents can provide these goods/services

Provision of public goods

- How to govern this public good action arena? private, public or in a hybrid form
- Rangan et al., 2006: Look at the trade-off between:
  - Public and private benefits
  - Public and private resource costs

Provision of public goods



When to use hybrid governance?

Different stakeholders possess specific assets which need to be pooled

- Maintenance of a typical regional landscape
- Value lies in combination of different farm types, crops & practices

Highly specific investments needed whose scale goes beyond the individual stakeholder

- Maintenance of hedges or other landscape elements
- Investments in highly specialized machines,too costly for individual farmers

Which hybrid structure to choose?

Simple hybrid, such as a contract

OR

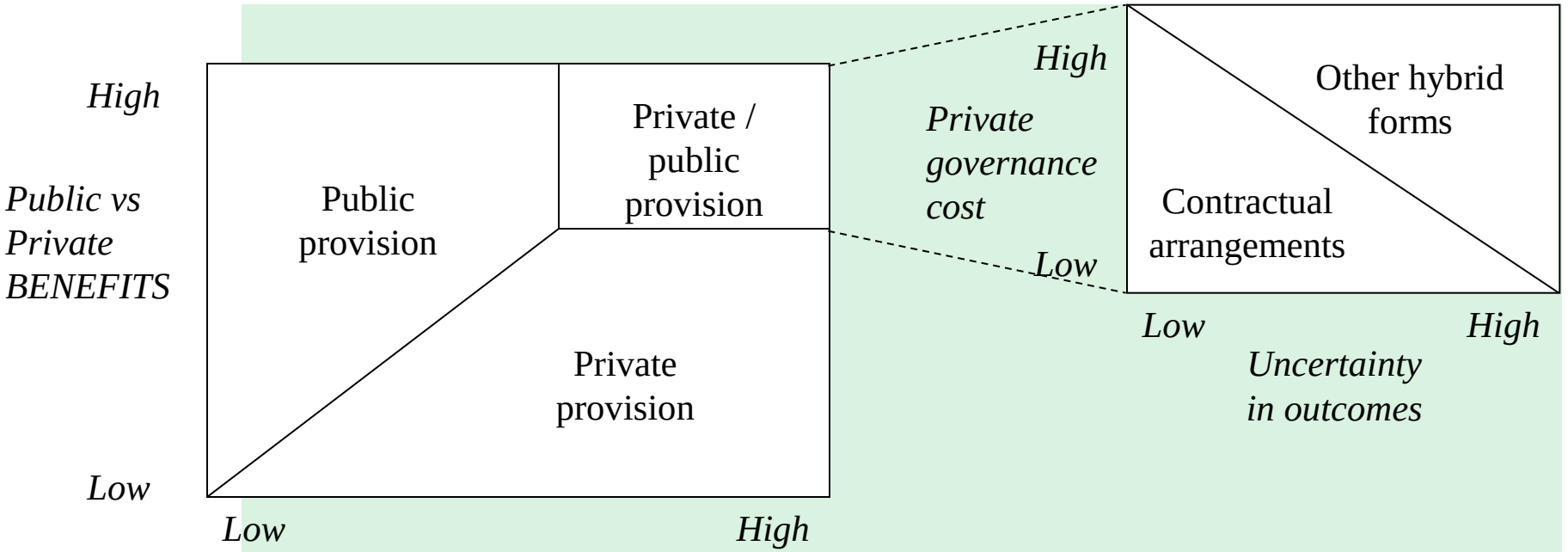
More advanced hybrid, such as trusts, cooperatives, …

Which hybrid structure to choose?

⇒The choice depends on:

- ⇒Measurement costs and risks *(Williamson, 2007)*
- ⇒(A)symetric information and uncertainty vs investment costs *(Ducros, 2007)*
- ⇒Specificity of stakeholders assets and specificity of investments needed

Provision of public goods



Categories of hybrid governance

Information devices: providing information to coordinate individual actions

- regional landscape centres in Flanders

Contractual arrangements: making individual contracts with private actors

- agri-environmental contracts

Internal regulation or monitoring: internal body as intermediary

- agri-environmental cooperatives, water user associations, private-public organizations for protection of property rights of genetic resources & biodiversity

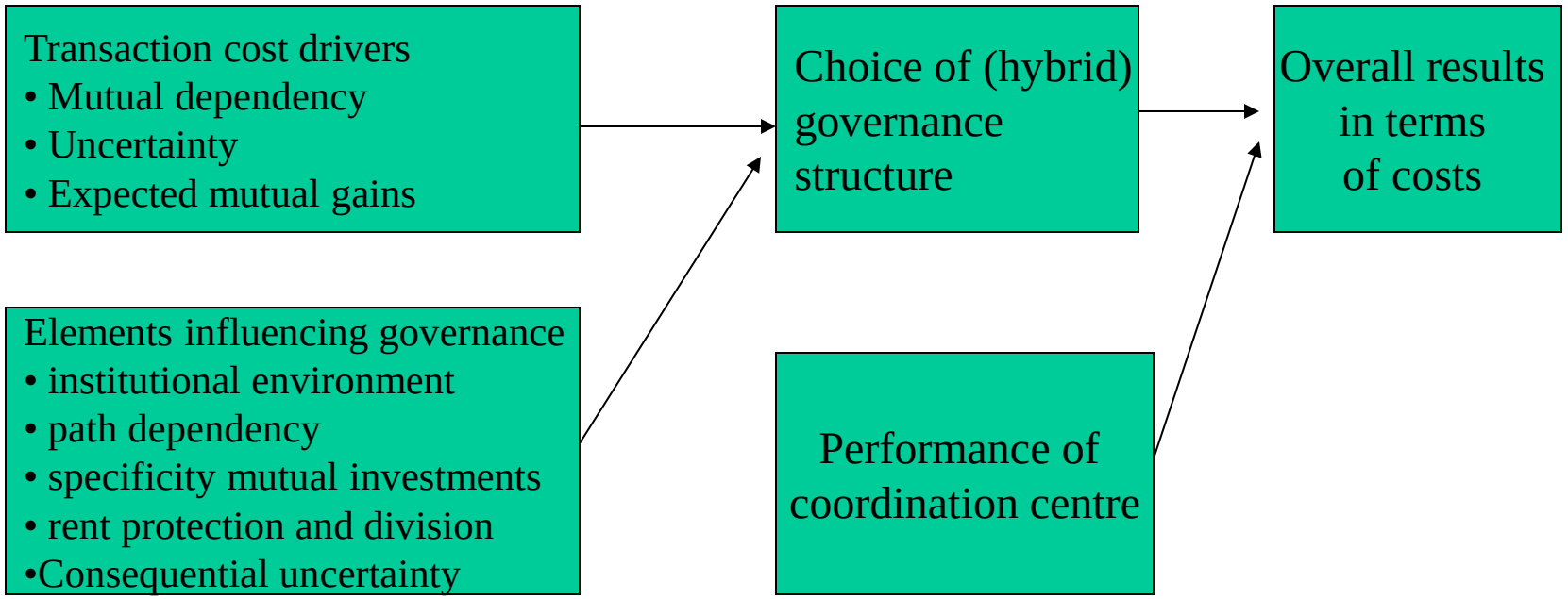
Governing body: transfer of juridical/legal power to new public/public-private body

- Natural parks

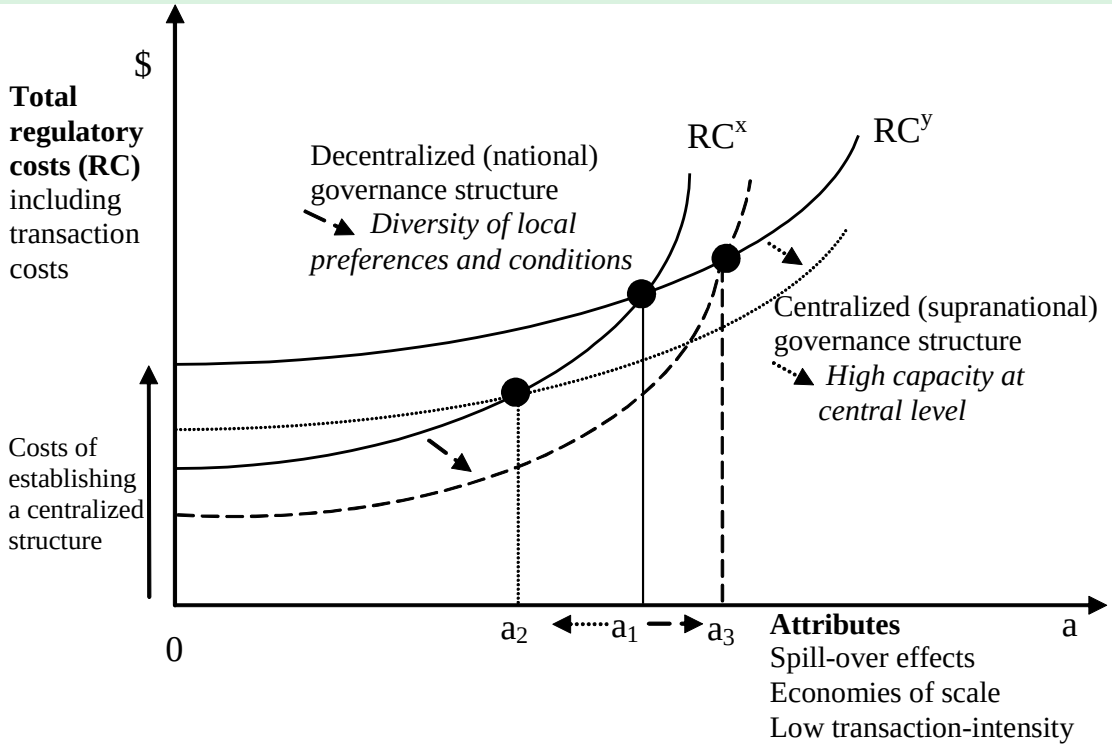
Evaluating hybrid institutions providing public goods

- TC drivers are not the only element
- Take into account the performance of the 'coordination centre'
- Analyse mutual relations, competition, influence and conflicts among different structures
- Take into account the degree of (de)centralisation

General framework (Menard)



Central/decentralised governance in function of transaction attributes



Source: Based on Williamson (1991) and Birner & Wittmer (2004)

4. Conclusions about the framework

Hybrid governance structures between public and private actors can create better allocation mechanisms for the delivery of public goods and their development in agriculture.

⇒ *Their efficiency can be assesed using transaction cost theory*

⇒ *Methods exist to measure these TC*

Conclusion: delivery of public goods in agriculture

1. Delivery of public goods is a transaction between society and farmers
2. Transactions occur in action arenas
3. Action arenas are governed by nested rules or institutions which provide incentives and constraints (or TC) for entering in a transaction
4. By aligning the governance of the action arena with the characteristics of the desired transaction, transaction costs that are automatically present can be minimized and the delivery of the desired outcome optimized

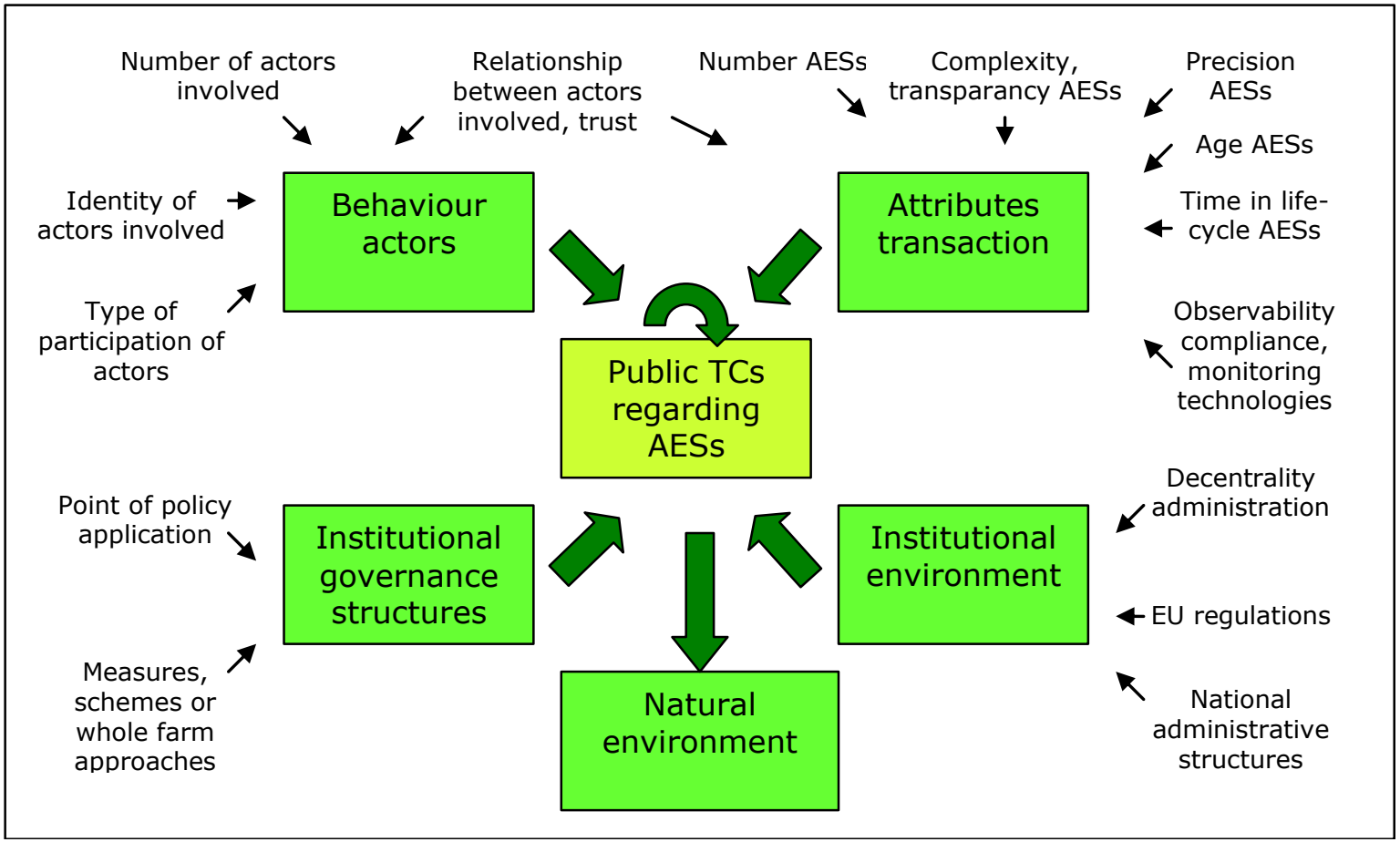
Distinction has to be made between public and private transaction costs in public-private schemes (e.g. envrironmental contracts)

PRIVATE		Private transaction costs of participation in the scheme	Net compensation from participation in the scheme (i.e. notional profit foregone by the farmer
PUBLIC	Public transaction costs (administrative costs of operating the scheme)	Compensation payments to participants	

Two condition for efficient nested institutions:

- Total TCs as low as possible
- Division of TCs between private and public actors should be balanced

Factors influencing TCs related to AESs



Examples of assessment of transaction costs

- Private transaction costs of AES (Mettepenningen, Verspecht and Van Huylenbroeck (2009) Journal of Environmental planning and Management. 52(5)
- Public transaction costs of AES (Mettepenningen, Beckmann and Eggers (2011) Ecological Economics 70(4).
- Transaction costs of water user associations using choice experiments (Herrera, Van Huylenbroeck and Espinel (2004) International Journal of Water Resources Development 20(4). p.537-551