



Building resilience through dynamic institutional efficiency The case of forest biodiversity

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[Defining resilience]

- Resilience can be defined broadly speaking as “the capacity of a system to absorb and utilize or even benefit from perturbations and changes that attain it, and so to persist without a qualitative change in the system’s structure” (Holling, 1973).

Resilience in socio-ecological systems

- Resilience in social systems differs from resilience in biophysical systems (Young, p. 312). An important difference is the capacity of learning of social systems, including learning based on
 - anticipation (models) and
 - reflexivity (critical awareness of the conditions and limitations of the learning process).

2. Building and implementing institutions

Three models of institutional design in the Social Sciences : towards a possible reflexive role for governance

2.1. Realism : Bargaining

e.g. environmental mediation

2.2. Institutionalism : coordination devices (each individual gains from setting up common coordination devices)

e.g. Property rights on traditional knowledge (Tim Swanson and Mare Sarr)

e.g. Community based institutions to control illegal traffic in wildlife species (Sarah Hernandez)

etc.

2.3 Reflexive governance : decentralized reflexive adaptation to the multiple regulatory frameworks and the governance regimes

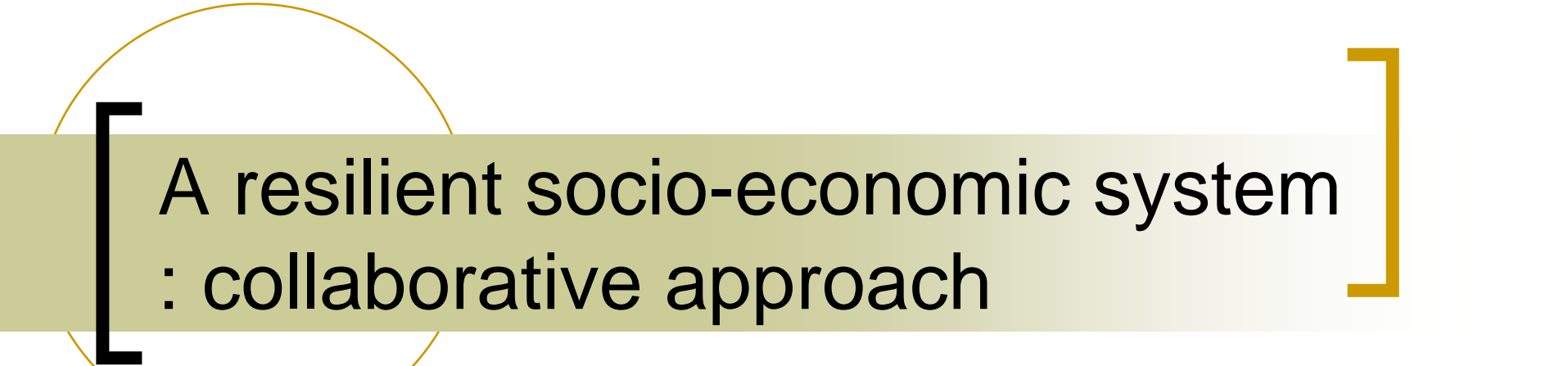
Building upon theories of dynamic efficiency

- Dynamic change in perceptions
- Dynamic change in social preferences
- Experimentation with rules



A non resilient socio-economic system : top down regulation

No private forest owners were managing their forests, due to their difficulties to implement the new top down forest regulations in the 1990.



A resilient socio-economic system : collaborative approach

1. In 1994 a pilot project started which received early recognition as an instance where new ways of dealing with forest management could be experimented. It's only after the experiment had gained some momentum that the forest policy law was changed, based on the lessons that were learned from this project.
2. A flexible legal framework was designed that, while setting 12 targets to be reached by sustainable forestry, allowed further learning in the pilot JFM organisations.

Benefits of the JM organisations

- From the point of view of the building of cost-effective institutions, the main benefit of the JFM institution is its contribution to lowering the transaction costs of the forest owners in their negotiation with the administration
- Creation of a market for small forest timber products
- Second, JFM facilitates the negotiation of forest access plans with the different use groups and the local administration through organising collective dialogue.

The pan-European Forestry process

Set of 24 criteria and 52 indicators :

- 1. Criteria for the implementation of the existing legislation
- 2. Criteria for the maintaining of the social and cultural functions of the forest
- 3. Criteria for the maintaining of the economic and productive functions of the forest
- 4. Criteria for contribution to the protection of the environment
- 5. Criteria for the contribution to biodiversity conservation
- 6. Criteria for monitoring and planning of the forest management

Self-evaluation of targets

Criteria and Indicators of the Flemish Forestry Decree explicitly translated in operational targets	Indicators of the BZK forest management plan 2007-2012, p. 4 (validated by the JFM governing board, with specific quantitative targets for each indicator)
CSFM 2.1.1.	B.G. 2.3. Information and training activities
CSFM 2.1.2 / 2.1.3.	B.G. 1.1. Number of complaints a year
CSFM 2.1.4.	B.G. 3.5. Target area for access management plan
CSFM 2.3. / 2.4. / 3.1.1. / 3.1.4. / 6	B.G. 3.3. Target area for common management plan
CSFM 5.1.1. / 5.1.2.	B.G. 3.6. Target area for interventions for ameliorating ecological function (exotic species, access infrastructure)

Membership beyond the status quo

	Surface (ha)	Number of owners	% of surface in the JFM	% of owners in the JFM	Year of creation
Engstraat	44	51	61	69	2000
Eindhout	1116	226	34	24	2000
Bel	180	178	56	57	2000
Scherpenbergen – De Hutten	206	148	64	25	2002
Heidehuizen	139	122	43	34	2002
Oevelse dreef	23	3	74	100	2002
Teunenberg – Nieuwe hoeve	165	312	50	32	2002
Keiheuvel	221	462	19	16	2004
Veerle-Heide	40.3	57	34	30	2005
TOTAL	1134.3	1559	45	30	

[Institutional design principles]

- attribution of collective decision rights to the owners
- participation of forest owners to forest management activities or to interaction with user groups in forest related activities

Institutional design principles

- First, the project starts from the interests and needs of the forest owners, rather than their position and discourse in regards to nature conservation.
- Second, the JFM group organizes itself a learning process on the definition of the sustainability targets.
- Third, the design of the learning process is evaluated at regular intervals by the participants to adapt it to the local circumstances and stakes at hand.

[Some concluding remarks]

- a clear division of tasks was established : the control function of compliance with government regulation remained with the executive bodies such as the forest administration, the forest rangers and the local authorities, while the social learning was the task of the JFM management institution
- The JFM organisation receives support by the government, as long as the operational objectives, formulated through a clear set of indicators, are met and if the indicators show a progress in moving towards the government targets.