



Institutional Arrangements for River Basin Management – A Theoretical Perspective

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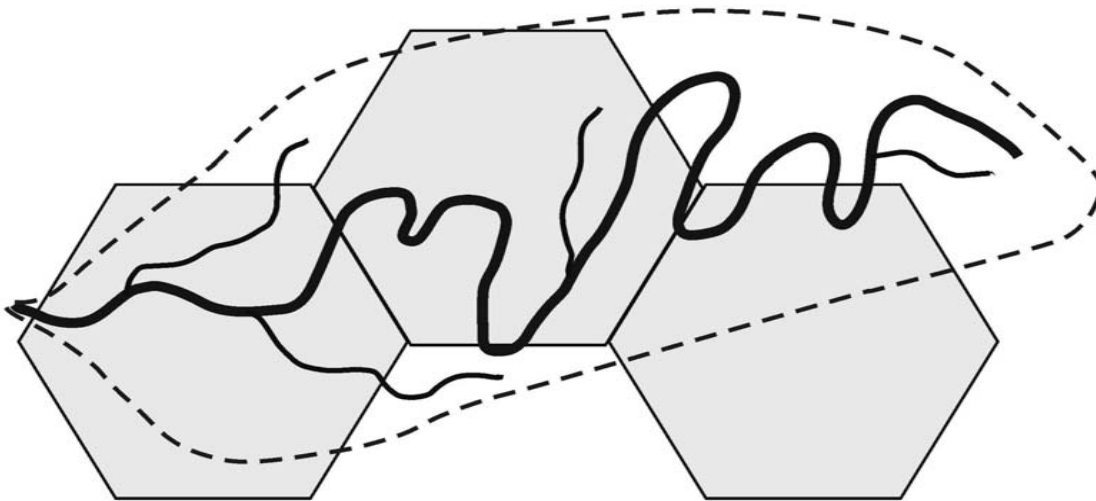


Content

1. River basin management as an externality problem
2. Inter-jurisdictional institutional arrangements for an internalization of transboundary externalities in river basins
 - Problem solving capacity of freestanding negotiations vs. hierarchical direction
 - Role of the institutional setting for the problem-solving capacity of negotiations

“Problems of fit”

Probleme der Inkompatibilität zwischen institutionellen Arrangements und biophysischen Systemen



- Misfit of hydrological & political boundaries
=> transboundary externalities

Water Uses and Their Physical Effects

Use	Effect on	Water quantity	Water quality	Water regulation	Ecology
Water extraction		(-)			(-)
Wastewater discharge		((+))	(-)		(-)
Wastewater treatment			(+)		(+)
Construction of dams		(+/-)	((-))	(+/-)	(-)
River channeling for navigation				(+)	(-)
Recreational uses					(-)
Fisheries					(-)
Erection of dykes				(-)	(-)
Provision of retention areas				(+)	(+)
'Consumption' of forests, wetlands & flood plains			(-)	(-)	(-)

=> Potentially pervasive negative and positive externalities

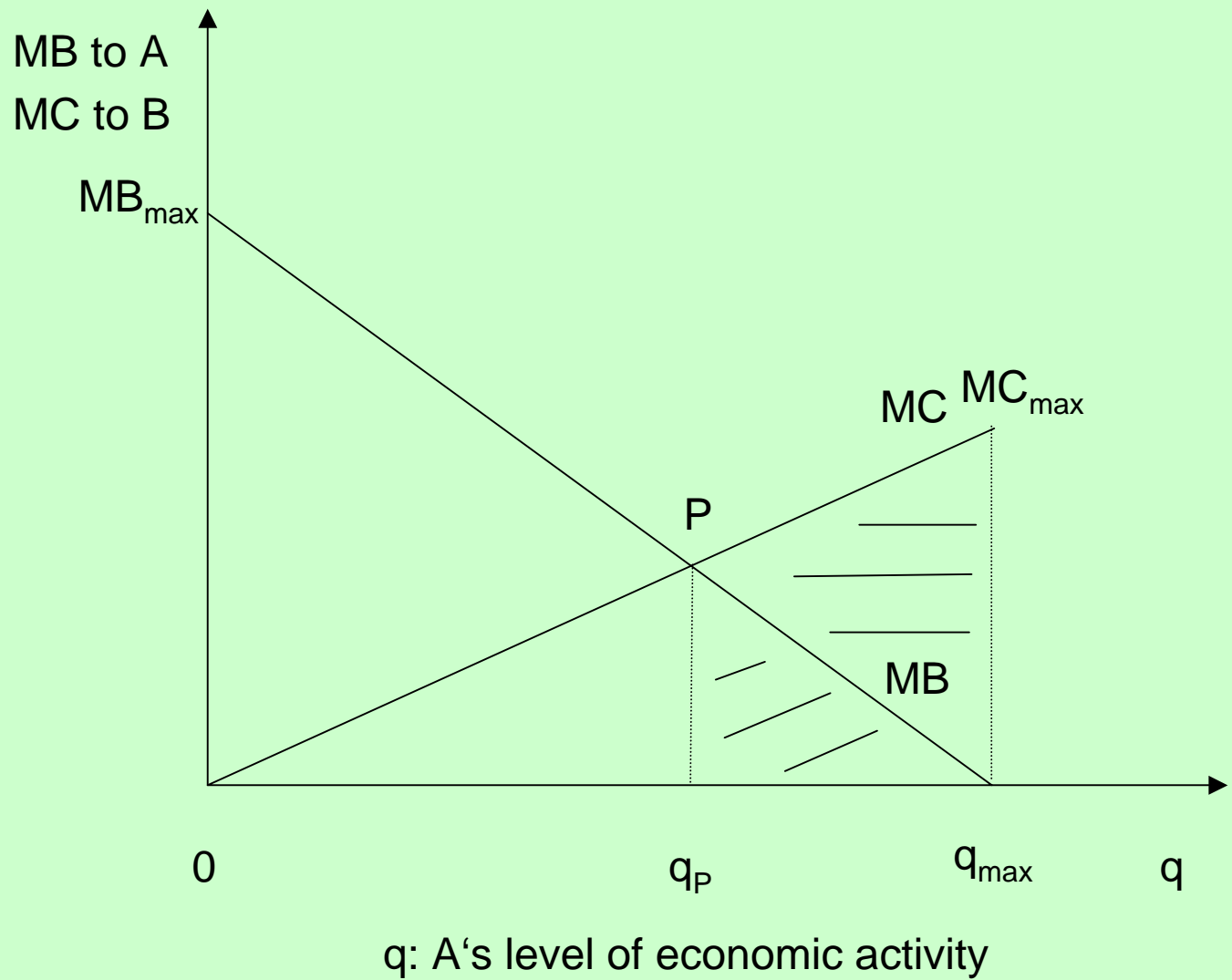


Externalities

- Production or consumption activity of party A has direct effect on production or consumption activity of party B
- Direct: effect is not reflected in relative prices



Externalities and Efficiency





Implications of the Coase Theorem

Unidirectional externalities may be internalized through negotiations

But: restrictive set of assumptions

- Specified property rights
- Perfect information
- No transaction costs, in particular
 - No negotiation costs: successful bargaining over gains
 - No monitoring and enforcement costs

Coase: need to take transaction costs into account!

=> Alternative inter-jurisdictional arrangements & their problem-solving capacity?

Institutional Arrangements

	Institutional Setting			
Modes of Interaction	Anarchical field	Network, Regime	Association	Organization
Unilateral action	X	X	X	X
Negotiated agreement	(X)	X	X	X
Majority vote	-	-	X	X
Hierarchical direction	-	-	-	X

See Scharpf 1997

- => Institutional setting defined by set of interaction modes it supports
1. Comparison of problem-solving capacity of freestanding negotiations & hierarchical direction
 2. Role of institutional setting for negotiations



Negotiation vs. Hierarchical Direction

Voluntary Negotiations

Theory: Efficient outcomes if

- specified property rights
- Perfect information
- no transaction costs.

Practice:

Decision-making

1. Status quo may not be recognized
2. Information problems: opportunism
3. TC may be (prohibitively) high

=> Outcome is uncertain

Enforcement: Agreements with side-payments are not self-enforcing

Hierarchical Direction

Theory: Efficient (& fair) outcomes if decision-maker:

- has all relevant information
- acts in the public interest.

Practice:

Decision-making

1. Information problems
(substantive issues, interests)
2. Motivation problems

Enforcement: High, but coordinator may enforce an ill-informed or unresponsive decision



Riparian Negotiations vs. RBO

	Freestanding Inter-jurisdictional Negotiations	River Basin Organization with Hierarchical Direction
Information on substantive issues	Low, unless DSS is in place	High, once a DSS is established
Information on interests of involved jurisdictions	Problem: Negotiator's dilemma	Problem: Infringement of sovereignty. Potentially collectively optimal solution
Information on interests of affected population	Relies on participation mechanisms	Relies on participation mechanism
Likelihood to reach a decision	Uncertain.	High, but possibility of ill-informed or unresponsive decisions.
Legitimacy of the decision	High if all affected jurisdictions are involved, and if accountability of representatives is ensured.	Low, unless democratic accountability is ensured.
Fairness of the decision	Difficulty to address issues of redistribution.	Theoretically high
Enforcement	Agreements with side-payments are not self-enforcing.	High, but possibility of ill-informed or unresponsive decisions.
Overall transaction costs	Generally high.	Set up: high (prohibitive?) Operation: low

➤ Voluntary set-up of RBO unlikely; if it were need to ensure accountability

Institutional Arrangements

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See Scharpf 1997

=> Inter-mediate solutions?

=> Comparing international, interstate & intrastate negotiations

Negotiations & Institutional Settings

Anarchic fields	➤ Opportunism prevails
Networks, Regimes	<ul style="list-style-type: none"> ➤ Repeated interaction may create trust, reduce TC & opportunism ➤ Negotiation framework may set joint objectives, outrule credible threats, provide fair procedures (compliance?) ➤ Agenda setter may help to identify agreeable solutions & reduce TC
Association	➤ Majority vote may avoid joint-decision trap
Organization	➤ Hierarchical power to adopt/reject horizontal negotiation outcomes reduces opportunism ("negotiations in the shadow of hierarchy")

- Increasing degree of institutionalization reduces TC & opportunism in negotiations



Conclusions

- Although hierarchical direction may sometimes appear desirable, it would create accountability problems;
 - Negotiations are key, they can be facilitated through “institutionalization”:
 - International level: networks, regimes
 - Interstate level: regimes plus special role of federal institutions
 - Intrastate level: special role of associations
 - Secretariats/third parties play important roles as agenda setter
- ⇒ Combination of negotiation and carefully drafted institutions
- ⇒ Need to look at detailed regime design!