



## **GLI INCONTRI SULLA REGOLAZIONE DEI SERVIZI IDRICI**

PRIMA EDIZIONE

**La regolazione del servizio idrico integrato  
come regolazione per contratto**

PRIMA SESSIONE - 28 novembre 2005

**La regolazione per contratto, temi teorici  
ed esperienze internazionali**

**La governance delle convenzioni di affidamento:  
i limiti dei contratti**

**Prof. Claude Ménard**

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***GOVERNING THROUGH  
CONTRACTUAL ARRANGEMENTS:  
WHY CONTRACTS CANNOT DO IT  
ALL!***

*“La regolazione del servizio idrico integrato come  
regolazione per contratto”*

*AneA, Palermo, 28 e 29 Novembre 2005*



# *GOVERNING THROUGH CONTRACTS*

## *I: INTRODUCTION*

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- Success of contracts as mode of governance for reforming/governing urban water systems
- Based on a contestable sequence:  
PPP => Market forces => Higher investments and lower prices => benefit to consumers
- In this paper: why are contracts so fashionable in reforming/governing water?  
And why it cannot do it all?



# ***GOVERNING THROUGH CONTRACTS I: INTRODUCTION***

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- Background of my discussion:
  - Reforms implemented in the urban water sector by international organizations (World Bank etc.)
  - French PPPs (“concession”), often viewed as a model for reforming water supply
  - But also other experiences in providing infrastructures (e.g. highways, bridges, tunnels etc.)
  
- Organization of my presentation:
  - What forces push towards reforming/governing through contracts?
  - What type of contract and why?
  - What have we learned?

# *GOVERNING THROUGH CONTRACTS*

## *II: FORCES AT WORK*

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### Central proposition:

*It is the combination of endogenous factors (**sector crisis/tensions**) and exogenous forces (**financial and political crisis**) that leads to reforms, understood as substantial institutional changes, and to the key role attributed to contracts in doing so.*

# *GOVERNING THROUGH CONTRACTS*

## *II: FORCES AT WORK*

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### *II.1: A combination of endogenous and exogenous forces.*

- Sector crisis/tensions (Rate of connection, UFW, Prices, Collection rate) aggravated by very high level of sunk costs and related risks of opportunistic behavior on both sides  
→ specificity of the water sector
- Financial dead-end: regulated prices (almost universal in water sector) prevent self-sustainable investments, which is amplified by crisis in public finance (often exacerbated by high rate of inflation in DC):  
→ Operator (public or private) is squeezed => low investments, low maintenance

# ***GOVERNING THROUGH CONTRACTS***

## ***II: FORCES AT WORK***

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### ***II.2: Economic forces are rarely sufficient condition: political shifts needed.***

- *Political economy of reform in water sector:*
  - Equilibrium of winners and losers: identifying the key constituencies
  - Meets the specific sensitivity (and politicization) of urban water sector: (i) there is no substitute to water; (ii) sets of users and voters totally overlap
- *Two dimensions of this political factor:*
  - Key role of “swing” voters
  - Timing of reform highly constrained: opening window usually very short

# *GOVERNING THROUGH CONTRACTS*

## *II: FORCES AT WORK*

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### *II.3: Two important consequences:*

- Short period for reforming = designing contracts with very incomplete information
  - ⇒ Substantial renegotiations in water contracts (although not exclusively: see Guasch on LA)
- Substantial changes in the allocation of rights (decision, property) raise issue of credibility
  - ⇒ Enforcement of contracts as key factor



# *GOVERNING THROUGH CONTRACTS*

## *II: FORCES AT WORK*

*Hence, the very nature of tensions in the water sector push towards contractual solutions*

→ The financial aspect is crucial, while political dimension makes full privatization difficult: PPP viewed as solution (“ideal”??)

→ Advantages of transferring risks (and consumers’ anger!) to private operators

→ But involves political risks (backlash from voters): hence the very slow pace of reforms in the sector, and the highly regulated nature of contracts

# *GOVERNING THROUGH CONTRACTS*

## *III: WHAT TYPE OF CONTRACT?*

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### *III.1: Make or buy?*

**Dominant view: outsourcing (PPP) as second best (next to privatization). Why?**

- (A) Relaxing capital constraints on public authorities as well as on operator*
- (B) Better incentives : Private operator as residual claimant*
- (C) Scale and Scope economies, thanks to specialized operators*

# *GOVERNING THROUGH CONTRACTS*

## *III: WHAT TYPE OF CONTRACT?*

### *III.2: HOWEVER EFFICIENCY OF CONTRACTING OUT REMAINS AN OPEN QUESTION*

#### **✧ At the theoretical level:**

[1] TCT (Williamson 1976, 1999): efficiency depends on adequacy of governance to transactions

[2] ICT (Hart et al. 1997): Potential distortions when contracts are incomplete (e.g., quality vs. costs)

[3] AT (Tirole, 1999): Counterproductive effects of high incentives

# *GOVERNING THROUGH CONTRACTS*

## *III: WHAT TYPE OF CONTRACT?*

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### **⌘ At the empirical level:**

[1] Yarrow (1986): Early experience of privatization in UK

[2] Guasch et al. (2002): Mixed results of reforms in Latin America (with major problems of renegotiation and under-investment)

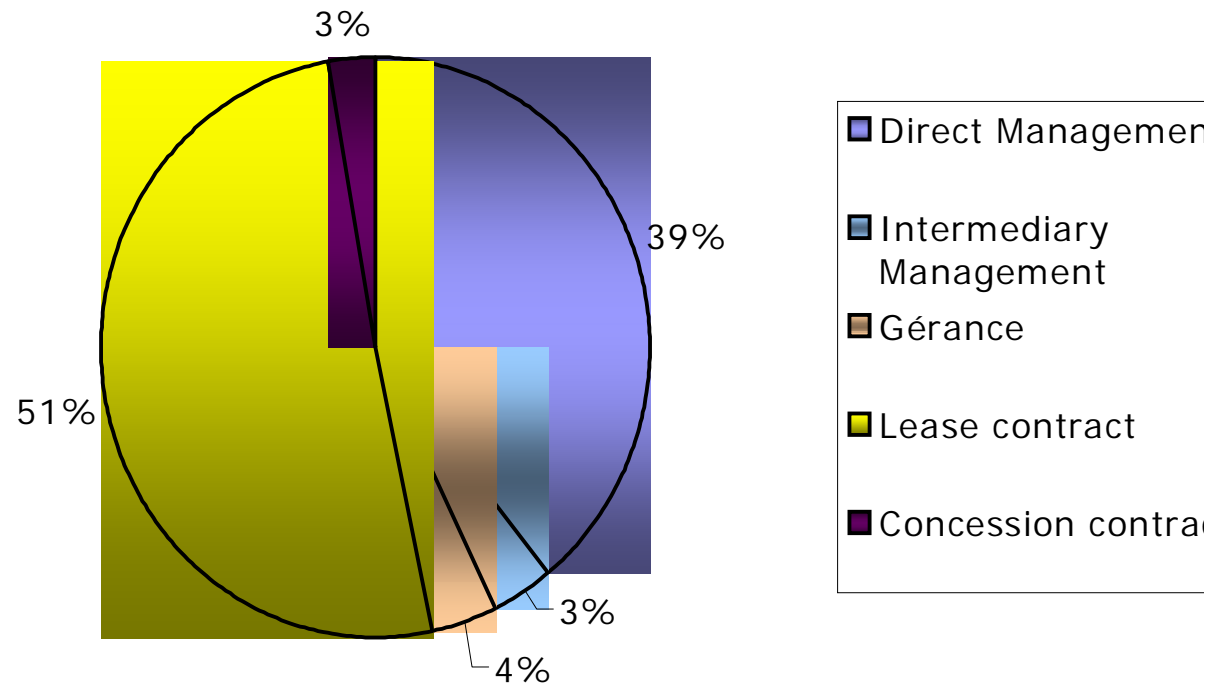
[3] Shirley et al. (2002): Similar contracts produce radically different effects, depending on their institutional environment .



# ***GOVERNING THROUGH CONTRACTS***

## ***III: WHAT TYPE OF CONTRACT?***

*(French water system)*



## GOVERNING THROUGH CONTRACTS III: WHAT TYPE OF CONTRACT? (SOURCE/ Laure Athias, 2005)

Type	Negotiated Ex Ante	Negotiated Ex Post
Firm-fixed price (FFP)	Price	No negotiation ex post
Definite escalator (DE)	Price , escalator	Only adjustment to prices according to an explicit predefined schedule
Definite escalator with a margin (DE/MARG)	Price , escalator, margin	Only adjustment to prices according to an explicit predefined schedule with the flexibility afforded by a predefined margin
Fixed price with partial economic price adjustment (FP/CPI)	Price, Economic price adjustment formula based on the consumer price index	Only formulaic adjustment to prices as specified ex ante
Fixed price with economic price adjustment (FP/COST)	Price, Economic price adjustment formula based on specific labor or materials indices	Only formulaic adjustment to prices as specified ex ante
Fixed price with EPA and with a margin (FP/EPA/MARG)	Price, Economic price adjustment formula, margin	Only formulaic adjustment to prices as specified ex ante with the flexibility afforded by a predefined margin
Fixed price with EPA and with traffic variation indexation (FP/EPA/TRAFFIC)	Price, Economic price adjustment formula, traffic indexation	Only formulaic adjustment to prices as specified ex ante and to traffic variation
Not-to-exceed price with partial economic price adjustment (NTEP/CPI)	Ceiling price, Economic price adjustment formula based on the consumer price index	A firm price at or below the ceiling
Not-to-exceed price with economic price adjustment (NTEP/COST)	Ceiling price, Economic price adjustment formula based on specific labor or materials indices	A firm price at or below the ceiling
Not-to-exceed price with a definite escalator and an economic price adjustment (NTEP/DE/EPA)	Ceiling price, definite escalator, Economic price adjustment formula	A firm price at or below the ceiling
Not-to-exceed price with a traffic variation indexation and an economic price adjustment (NTEP/TRAFFIC/EPA)	Ceiling price, Traffic variation indexation, Economic price adjustment formula	A firm price at or below the ceiling
Not-to-exceed price with economic price adjustment and with a margin (NTEP/EPA/MARG)	Ceiling price, Economic price adjustment formula, Margin	A firm price at or below the ceiling
Freedom during ten years and then NTEP/COST (FREE/NTEP/COST)	Ceiling price, Economic price adjustment formula based on specific labor or materials indices	A firm price at or below the ceiling after ten years
Renegotiation Adjustments (RENEG)	Initial automatic adjustment process, Frequency of renegotiation	A firm price

# *GOVERNING THROUGH CONTRACTS*

## *III: WHAT TYPE OF CONTRACT?*

*(C) Why one contractual form rather than another?*

*Transaction cost economics suggests:*

→ Key role of specificity of investments, which has two consequences:

(i) high level of sunk costs in water sector (and variation according to density, geology ...);

(ii) variable risk of opportunistic behavior;

=> there are situations favorable to public operator (Menard and Saussier, 2002; 2004): **next slides**

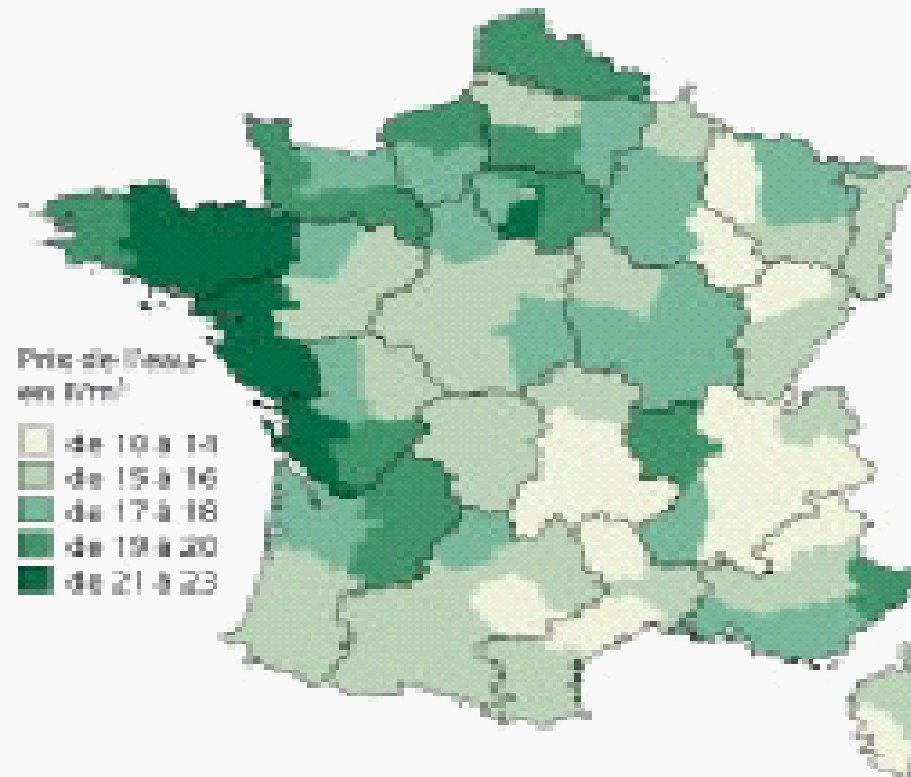


# GOVERNING THROUGH CONTRACTS

## III: WHAT TYPE OF CONTRACT?

(price per cubic meter in FF)

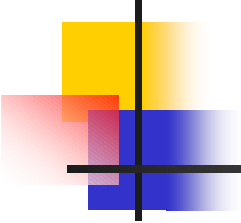
*Prix de l'eau par département en 1998  
(communes assainies)*



Source : enquête eau 1998, Ifen - Scea - Agences de l'eau

# *GOVERNING THROUGH CONTRACTS*

## *III: WHAT TYPE OF CONTRACT?* *(prices in euros for 120 m3, France, 2004)*



Organizational choices	Mean (PRICE)
DIRECT MANAGEMENT	116,81
LEASE	148,8
CONCESSION	141,61
INTERMEDIARY MANAGEMENT	156,12
GERANCE	201,23

# ***GOVERNING THROUGH CONTRACTS***

## ***III: WHAT TYPE OF CONTRACT?***



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→ What mode for mitigating risks of capture (capture of regulator by operator, or capture of operator's rent by regulator)?

=> key role of regulation and capabilities of regulator and, more generally, of micro-institutions in charge of implementing contracts (Shirley et al. 2002)

→ How to reduce contractual hazards (and rate and amplitude of renegotiations) while maintaining relationship?

=> credibility over time (Spiller and Savedoff, 2001), but this is not enough: key role of enforcement mechanisms (but what type?)

# ***GOVERNING THROUGH CONTRACTS***

## ***III: WHAT TYPE OF CONTRACT?***

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***(D) UNFORTUNATELY, MOST CONTRACTUAL SOLUTIONS (or, at least, MOST RECOMMENDATIONS FROM ECONOMISTS AND INTERNATIONAL ORGANIZATIONS) FOCUS ON EX-ANTE CONDITIONS :***

- Designing menu auctions
- Pre-qualification criteria (expertise, financial guarantees)
- Bids often formulated in terms of constant revenue stream
- Allocation of risk among parties as central object of ex-ante negotiations
- Minimum level of quality required

***WHILE MOST PROBLEMS DEVELOP EX-POST***

# *GOVERNING THROUGH CONTRACTS*

## *IV: WHAT HAVE WE LEARNED?*

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### *IV.1: WHAT IS EXPECTED?*

→ *CONSUMERS: Accessibility and reliability*

Rate of coverage, prices, quality

→ *OPERATORS: Sustainability*

Costs coverage, productivity, UFW

→ *SOCIETY: Welfare gains*

Costs and benefits for consumers, operators, Public authorities

*(Menard et al., World Development, 2002)*

# *GOVERNING THROUGH CONTRACTS*

## *IV: WHAT HAVE WE LEARNED?*

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### *IV.2: WHAT DO WE OBSERVE?*

#### **SEVERE EX-POST PROBLEMS**

- Delays in construction and provision of service
- Very high frequency of renegotiation of contracts
- Lower level of quality than promised, particularly in developing countries (rate of connection, UFW)
- Absence of responsiveness (ex: delays in repair)
- Substantial increase in prices almost everywhere

# *GOVERNING THROUGH CONTRACTS*

## *IV: WHAT HAVE WE LEARNED?*

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### *IV.3: WHY IS IT SO? (A Transaction Cost perspective)*

**A:: AT THE MICRO LEVEL: **Maladaptation**,**  
ie., lack of consideration for the adequacy  
(or inadequacy) of mode of governance to  
characteristics of transactions at stake  
(degree of uncertainty that varies according  
to density, geology, etc.; and level of specific  
investment)

**Illustration: Ménard & Saussier, 2002, 2004**

# GOVERNING THROUGH CONTRACTS

## IV: WHAT HAVE WE LEARNED?

### Can it be overcome at this micro level?

→ *Ex ante? Choosing contract and/or operator*

- Menu auctions (see complex set of contracts available: all flawed)
- Pre-qualification criteria (but how to combine with competition?)
- Bids formulated in terms of constant revenue stream (Engel et al. 2002)
- Allocation of risk among parties: recent trend → Public authorities (signal relative failure of PPP?)
- Minimum level of quality required: all is in enforcement

→ *Ex-Post? Execution*

- Dissuasive but realistic penalty clauses
- Enforceable sanctions; Monitoring and accounting procedures; Capacity of expertise
- 'Open Book' Policy; Yardstick competition ; Information transparency

**BUT: These are all limited solutions with severe flaws when institutional environment is ignored or neglected**



# ***GOVERNING THROUGH CONTRACTS***

## ***IV: WHAT HAVE WE LEARNED?***

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**B:: HENCE THE NECESSITY TO INTRODUCE  
INSTITUTIONAL ASPECTS AT THE CORE OF  
CONTRACTUAL ARRANGEMENTS**

**KEY FACTOR OF SUCCESS (or FAILURE) IS ADEQUACY (OR NOT)  
OF MICRO INSTITUTIONS:**

***(i): KEY ROLE OF LOCAL/REGIONAL INSTITUTIONS:***

- Going beyond central regulator: ex. of French Basin Agency
- Supportive capabilities (Administration)
- Human assets are key factor: problem at local level (= > how to develop institutions for sharing competencies?)

***(ii): CONFLICT RESOLUTION MECHANISMS***

- What enforcement mechanisms?
- What dispute resolution devices?
- Risks (and associated transaction costs) of judicialization of contractual relationships: HIGH TRANSACTION COSTS

# GOVERNING THROUGH CONTRACTS

## IV: WHAT HAVE WE LEARNED?

### C:: INESCAPABLE POLITICAL DIMENSION:

Because of VERY HIGH sunk costs, of UNIVERSALITY of needs for water, and of characteristics of NATURAL MONOPOLY => **LEGITIMACY** of public interference

*The problem then becomes: how to deal with this efficiently?*

→ *High contractual hazards:*

- *risk of political corruption*
- *risk of capture of regulator*
- *dispersion of decisions among bureaus and/or political levels*
- *risk of micro-management by public authorities*

→ *How to restrict the discretionary power of the Principal and the opportunistic chances of the Agent without sacrificing the legitimacy of public control?*

**=> NEED to focus on definition/delineation, and enforcement of property rights and of decision rights (they are not identical)**

# ***GOVERNING THROUGH CONTRACTS***

## ***IV: WHAT HAVE WE LEARNED?***

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### **D:: FRENCH EXPERIENCE: DECENTRALIZATION**

**(data: contracts/agreements for over 2000 units)**

#### **(1) Nature and duration of contracts:**

→ shift towards lease contracts and shorter term (12 years in average): risks transferred to public authorities

#### **(2) Multiplication of penalty clauses**

→ Developed by local collectivities as CONTRACTUAL SAFEGUARDS

→ 30 % of new contracts include penalty clauses based on *quality* issues

#### **(3) Clauses of renegotiation much more significant**

→ If changes in regulation (protection against costly changes in environmental requirements)

→ In case of variation in volume of water processed, with significantly lower threshold (old contracts:  $\Delta$  30% at least; recent:  $<\Delta$ 20%, with very little variance)

# GOVERNING THROUGH CONTRACTS

## IV: WHAT HAVE WE LEARNED?

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### (4) Increasing control by local authorities

- Detailed modalities of control (over 90% of new contracts )
- Control mostly through technical specification (15 criteria in average) and financial specification (10 criteria in average)
- Also control on side of leasers, over investments made by public authorities

### (5) Detailed inventories at beginning and end of leases

- BEFORE 1982: less than 10 % of contracts had such clauses
- AFTER 1992: Over 90 % of new contracts

### (6) Clauses regarding the type of investments

- *Fixed assets* (pipes etc.), i.e. largely sunk costs:
  - Before 1982: In 50 % of contracts, delegation to operators
  - After 1992: Less than 20 % delegated to operators
- *Redeployable assets* (pumps, equipment ...)
  - Before 1982: 65 % of contracts delegated to operators
  - After 1992: Over 80%

# *GOVERNING THROUGH CONTRACTS*

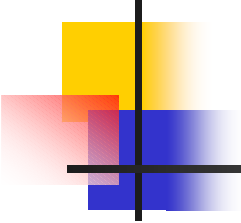
## *V: CONCLUSION*

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- 1) **Economic forces are at work in reforming water systems: it is not only POLITICS.**
- 2) **Reforms usually not endogenous: the 'decisive' impulse comes from external pressures, most of the time financial ones.**
- 3) **Essential to understand why PPP is so fashionable. However, PPP has serious drawbacks, resulting from incomplete contracts. Dark face of decentralization**
- 4) **PPPs are "administrative" contracts:**
  - **Asymmetry between contracting parties**
  - **Ex post renegotiations are the rule, and they take place within relatively rigid framework**
  - **Result: adaptation based on discretionary power**

# *GOVERNING THROUGH CONTRACTS*

## *V: CONCLUSION*

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- 5) Trend towards transferring sunk investments to local authorities  
-> Private operators increasingly risk averse in the water sector, particularly in Developing countries. Is PPP a myth?
  - 6) If local authorities play key role, then need to:
    - (i) think a bit more about nature and role of “microinstitutions” in designing contractual arrangements;
    - (ii) need to consider the transaction costs resulting from the existence of multiple layers of regulation.
  - 7) Considering the emphasis on building a competitive environment in the water sector, two surprising facts:
    - NO BENCHMARKING in the contracts we examined: comparison does not seem an issue
    - Almost NO POSITIVE INCENTIVES (e.g., no rewards for operators overperforming - see case of UK), likely because water is such a highly (political) sensitive issue. But may also result from limits in contracting.