



Institutional
mapping

colin green

Middlesex
University



 **UN-HABITAT** FOR A BETTER URBAN FUTURE **SWITCH** Zaragoza

**Sustainable Water Management in Cities:
Engaging stakeholders for effective change and action**
13-17 December 2010. Zaragoza, Spain



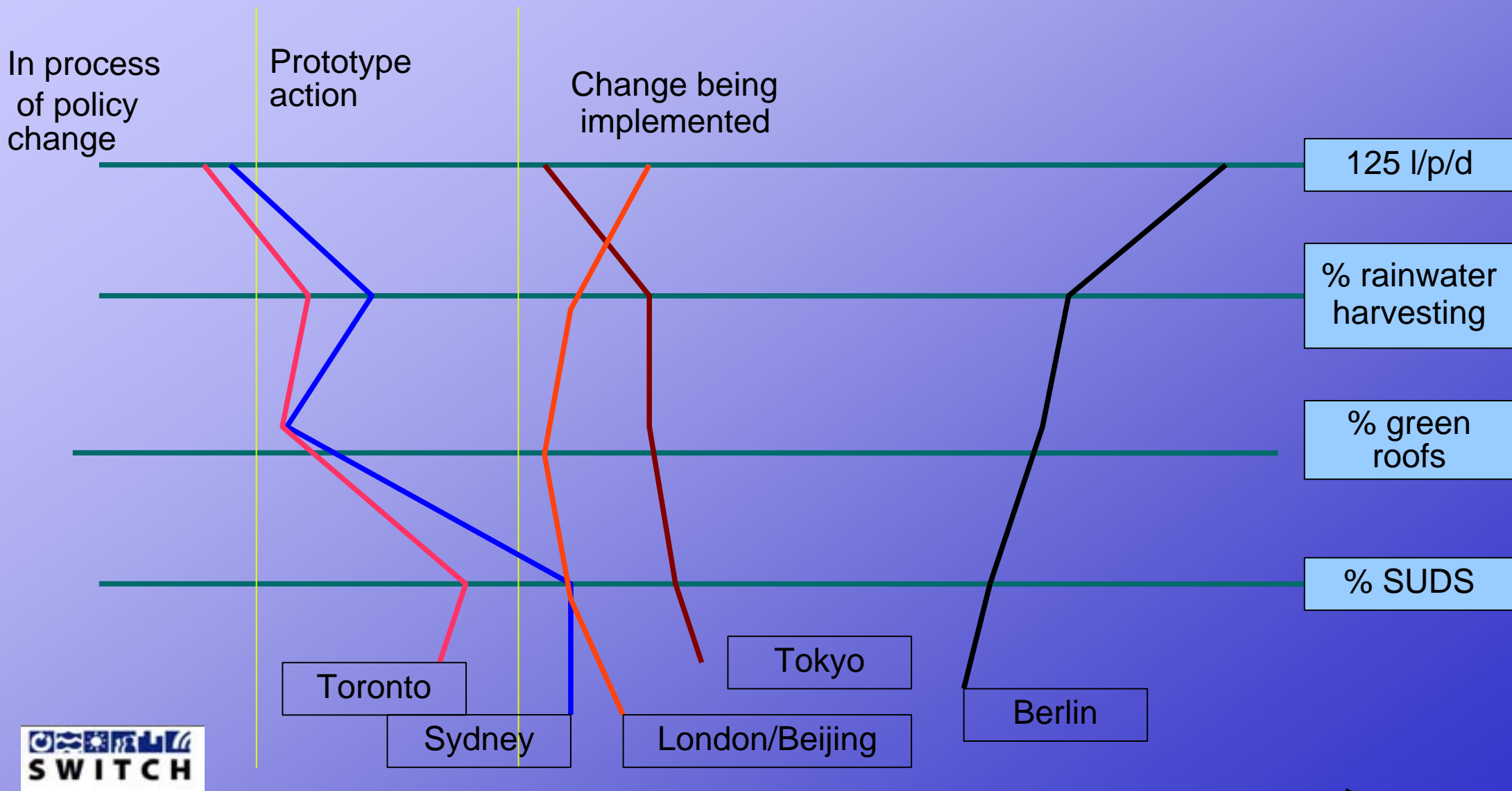
- Why do it?
- What is it?
- How to do it?
 - Lessons

Why do it?

The technology is mature

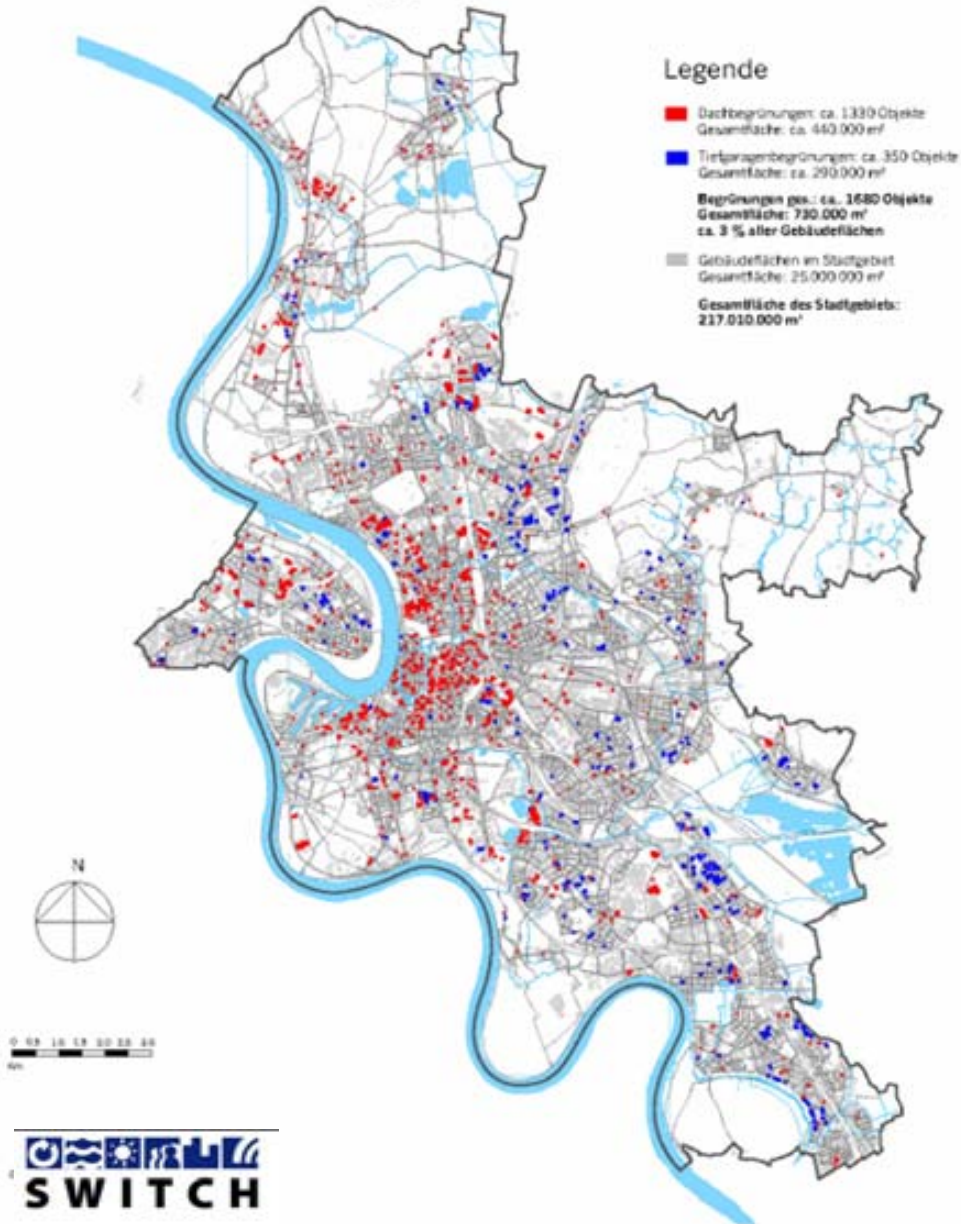
Therefore, differences between countries with the same resources are influenced by differences in governance

Progress towards SUWM





Dach- und Tiefgaragenbegrünungen im Stadtgebiet Düsseldorf



1,330 green roofs = 440,000 m², 1.6% of all roof areas, and 3% for the extended inner city zone

350 underground garages are also green roofed, giving a total 730,000 m²

Why is Germany 30 years ahead of England (and everyone else)?

Why do it(2)?

- Analyse problems of making change
- Compare cities to identify reasons for comparative success
- Learn lessons from history

What is it?



**self interest
interests**

shared interest

conflicting

Power is the capacity to induce change

So, changing to sustainable urban water management requires that there exists the power to induce that change

Does anyone have that power individually or collectively?

Do they have the incentives to use that power?

Does the city have the power to induce that change?

Forms of power

- Over the physical world — *traditional water management was about physical power*
- Over self
- Over others — *sustainable water management centres on social power*

Types of power

Money

Social norms

Regulation

Political influence

Moral appeal

Emotional appeal

Violence

Knowledge

Rule structures:

Administrative law

Civil law

Accounting principles

Religious requirements

Cultural norms e.g. guanxi, traditional laws

Disciplines

Finance ministry rules

Boundaries

Functional

Spatial

Temporal

What done, how done, for what purpose

e.g. what is capital expenditure (CAPEX) and what is operations and maintenance expenditure (OPEX)? – UK accountancy rules define demand management as OPEX but reservoirs as

How to do it (1)

Start with physical system

Analyse where boundaries in responsibility exist

Then look at the activity system

Analyse where the boundaries in responsibility exist

- look at definitions

How to do it (2)

- Take the implementation of a specific technology
- Who has the power to promote or inhibit?
- What are the limits of that power?
- What are the incentives to use that power either to promote or inhibit?
- Look for the boundaries
- Lots of painstaking work
- Informal rules

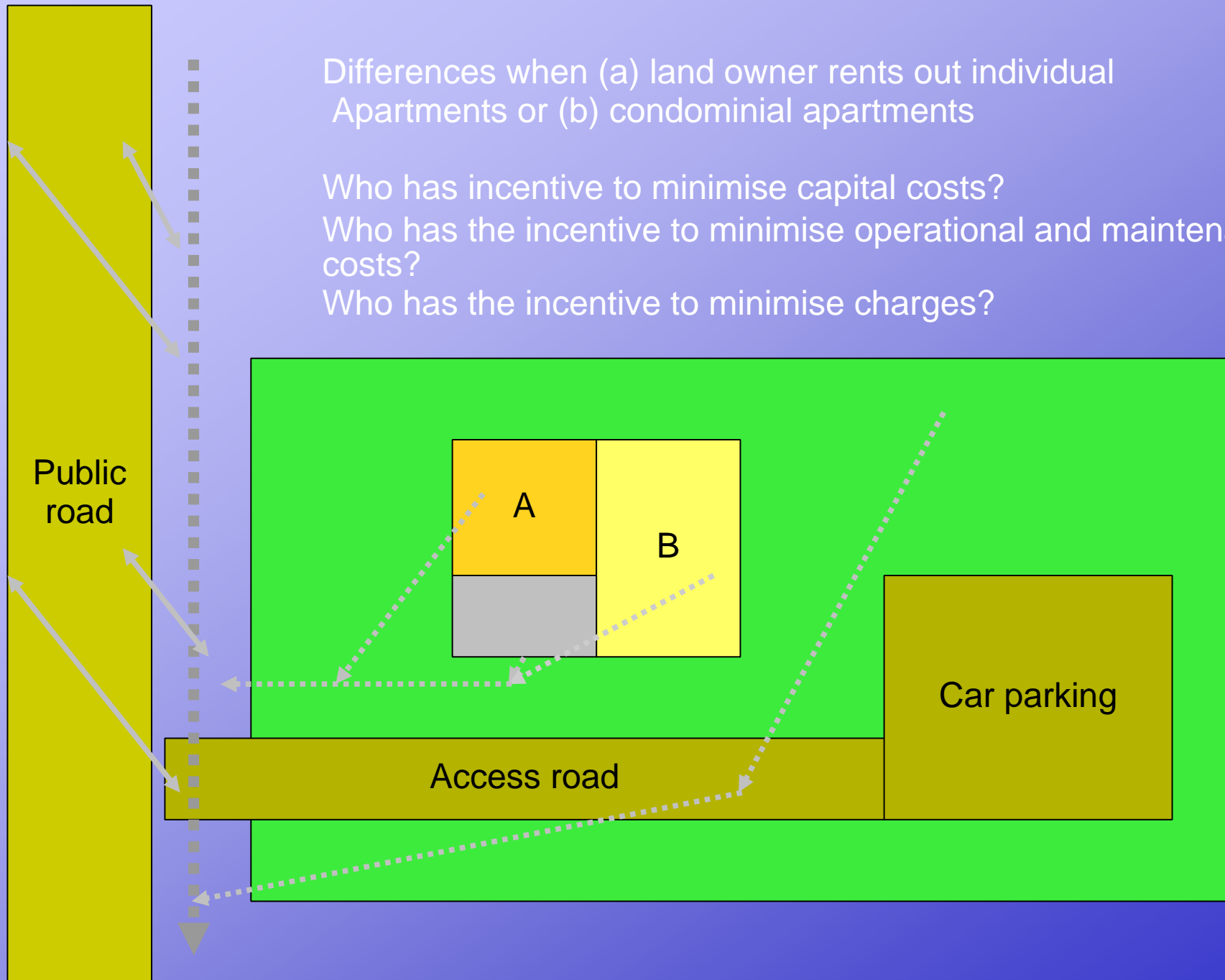
Surface water drainage

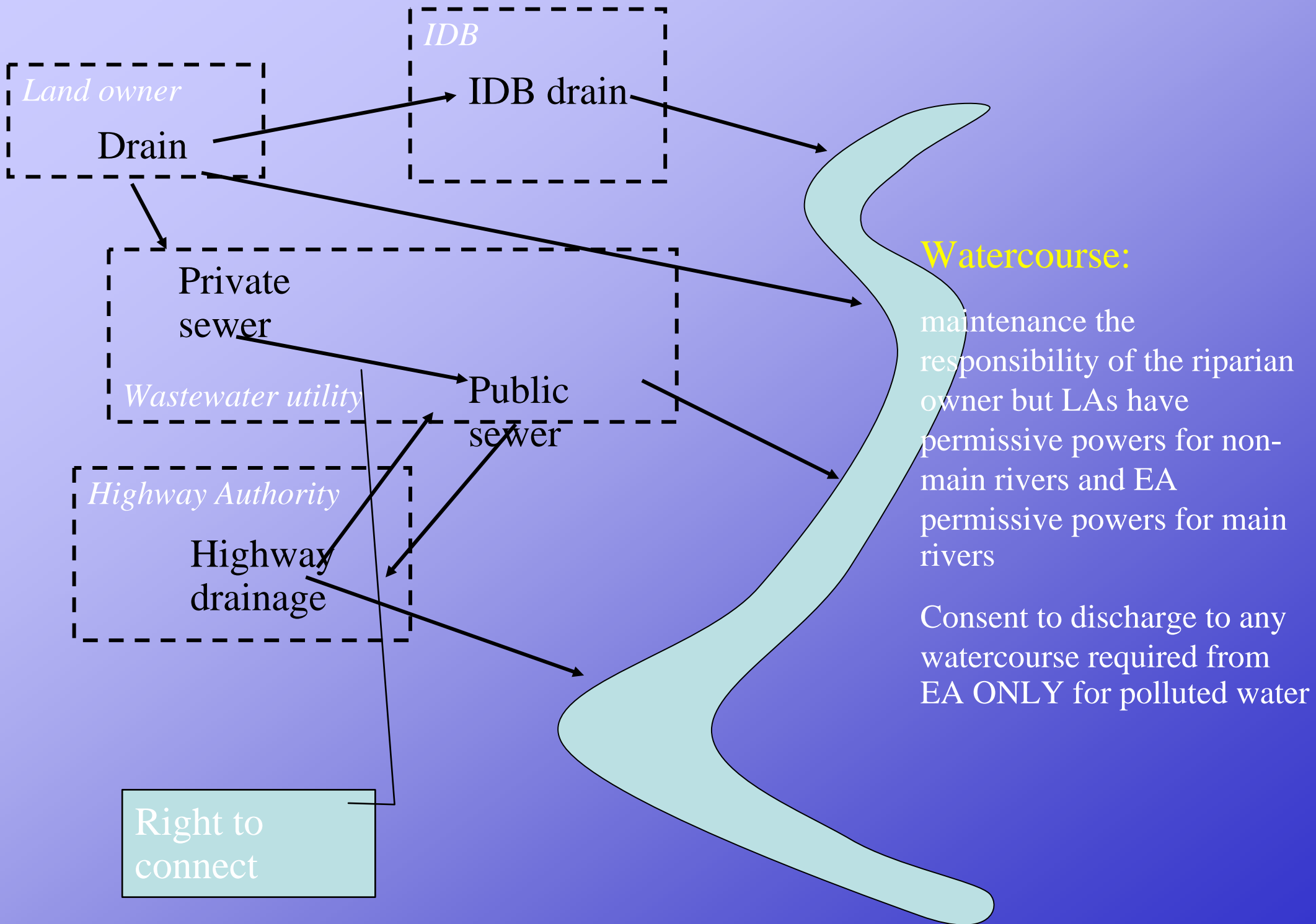
Differences when (a) land owner rents out individual Apartments or (b) condominium apartments

Who has incentive to minimise capital costs?

Who has the incentive to minimise operational and maintenance costs?

Who has the incentive to minimise charges?





What does it tell you?

Do you have power to make change? - is cooperation/collaboration necessary?

What are the problems in changing others?

- Boundaries: Gaps? Ambiguities? Wrong place? Conflicts?
- Powers: Lacking? Ineffective? Perverse incentives?

Messages

- Everything is done by people, interacting socially through the use of symbolic systems
- Technology is social relationships in concrete
- Is the institutional structure capable of innovation or simply of doing the past more efficiently?

Groundwater

- Who finds it?
- Who tests quality of the raw water?
- Who can access it?
- Who can drill/dig for it?
- Who limits distance between wells?
- Who limits access to the well/pump?
- Who limits distance between wells and polluting sources?
- Who limits the amount withdrawn?
- Who funds construction?
- Who undertakes construction?
- Who undertakes O & M?
- Who pays for O & M?
- Who pays for the water?
- Who can sell it?
- Who tests the quality of the water?
- Whose interests will be adversely affected by more wells/pumps?



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Green roofs

- Who owns buildings?
- Self-build? Ownership? Tenanted?
- What can tenants do to a building?
- Who builds what i.e. does the municipality build anything?
- Who owns the land?
- Are there any controls on what can be built where?
- Are there any controls on the construction of a building? Who sets building codes?
- Who finances buildings?
- Who sets development standards?
- Who enforces development standards?– if anyone
- Who enforces building codes? – if anyone
- Are construction companies insured for defect liability?
- Who is responsible for surface water drainage?
- Are there charges for surface water drainage?
- Do energy companies promote energy conservation?

