“A society that **intensifies** and expands the use of **land** and **water** in urban areas...
NEW GOVERNANCE SCHEMES FOR FRONTIERS OF LAND AND WATER GOVERNANCE

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SPATIAL PLANNING

WATER MANAGEMENT

DEMOGRAPHIC CHANGE & SEWAGE MANAGEMENT
SPATIAL PLANNING

WATER MANAGEMENT

URBAN RIVERSCAPES & SPACE FOR THE RIVERS
SPATIAL PLANNING

WATER MANAGEMENT
FRONTIERS OF
LAND AND WATER
GOVERNANCE
IN URBAN REGIONS
3 FRONTIERS OF LAND AND WATER GOVERNANCE IN URBAN REGIONS
vertical frontier

1.
vertical frontier
horizontal frontier
horizontal

2. frontier
2. Horizontal frontier
2. Horizontal frontier
fluid frontier
fluid frontier
FRONTIERS OF
LAND AND WATER
GOVERNANCE
IN URBAN REGIONS
FRONTIERS OF LAND AND WATER GOVERNANCE IN URBAN REGIONS

vertical

horizontal

fluent
FRONTIERS OF LAND AND WATER GOVERNANCE IN URBAN REGIONS

governance challenges

vertical horizontal fluent
governance
challenges

governance
challenges
vertical

horizontal

fluent

legitimacy

effectiveness

efficiency

fairness
legitimacy: knowledge on long term and invisible interconnections (expertism)
effectiveness: municipal governance vs. integrated regional approach (appropriate scale)
efficiency: causes and effects are not obvious; long term externalities (long term)
fairness: externalities can appear timely and spatially remote (liability problem)
legitimacy  knowledge on long term and invisible interconnections (expertism)

effectiveness  municipal governance vs. integrated regional approach (appropriate scale)

efficiency  causes and effects are not obvious; long term externalities (long term)

fairness  externalities can appear timely and spatially remote (liability problem)
knowledge on long term and invisible interconnections (expertism)

municipal governance vs. integrated regional approach (appropriate scale)

causes and effects are not obvious; long term externalities (long term)

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legitimacy: knowledge on long term and invisible interconnections  
(expertism)

effectiveness: municipal governance vs. integrated regional approach  
(appropriate scale)

efficiency: causes and effects are not obvious; long term externalities  
(long term)

fairness: externalities can appear timely and spatially remote  
(liability problem)
Vertical governance vs. horizontal governance

Legitimacy
- Knowledge on long term and invisible interconnections (expertism)

Effectiveness
- Municipal governance vs. integrated regional approach (appropriate scale)

Efficiency
- Causes and effects are not obvious; long term externalities (long term)

Fairness
- Externalities can appear timely and spatially remote (liability problem)
norms, values and rationalities shape decision-making
(direct consent)

Project-driven implementation, public & private stakeholders

High socio-economic dynamics
(short term)

Balancing competing interests (economic, social, environmental)
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(direct consent) 
project-driven implementation,  
public & private stakeholders

**horizontal**

**legitimacy**

- norms, values and rationalities shape decision-making  
  (direct consent)

**effectiveness**

- project-driven implementation,  
  public & private stakeholders

**efficiency**

- high socio-economic dynamics  
  (short term)

**fairness**

- balancing competing interests (economic, social,  
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balancing competing interests (economic, social, environmental)
spatially disconnected problem areas (downstream) and solution areas (upstream)

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efficiency

fairness

measures upstream affect efficiency downstream (risk driven)

barely win-win situations possible (Pareto decisions)
spatially disconnected problem areas (downstream) and solution areas (upstream)

legitimacy

complex, large scale, trans-boundary institutions (transboundary)

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fairness
legitimacy

- expertism
- direct consent
- disconnected

effectiveness

- appropriate scale
- project-driven
- transboundary

efficiency

- long term
- short term
- risk driven

fairness

- liability problem
- balancing
- Pareto decisions
“A society that **intensifies** and expands the use of **land** and **water** in urban areas ... 

... needs to **rethink** the relation between **spatial planning** and **water** management.”
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