

Visiting Payment for Ecosystem Services for water management in Europe

Food for thoughts

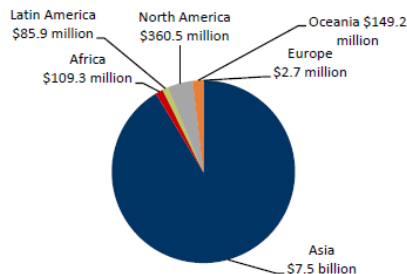
Pierre STROSSER
(ACTeon)

PESMIX – Montpellier – Juin 2014

Have you ever heard of PES in Europe?

Not really...

Figure 11a: Watershed Investments by Region, 2011



Source: Ecosystem Marketplace.

Or....

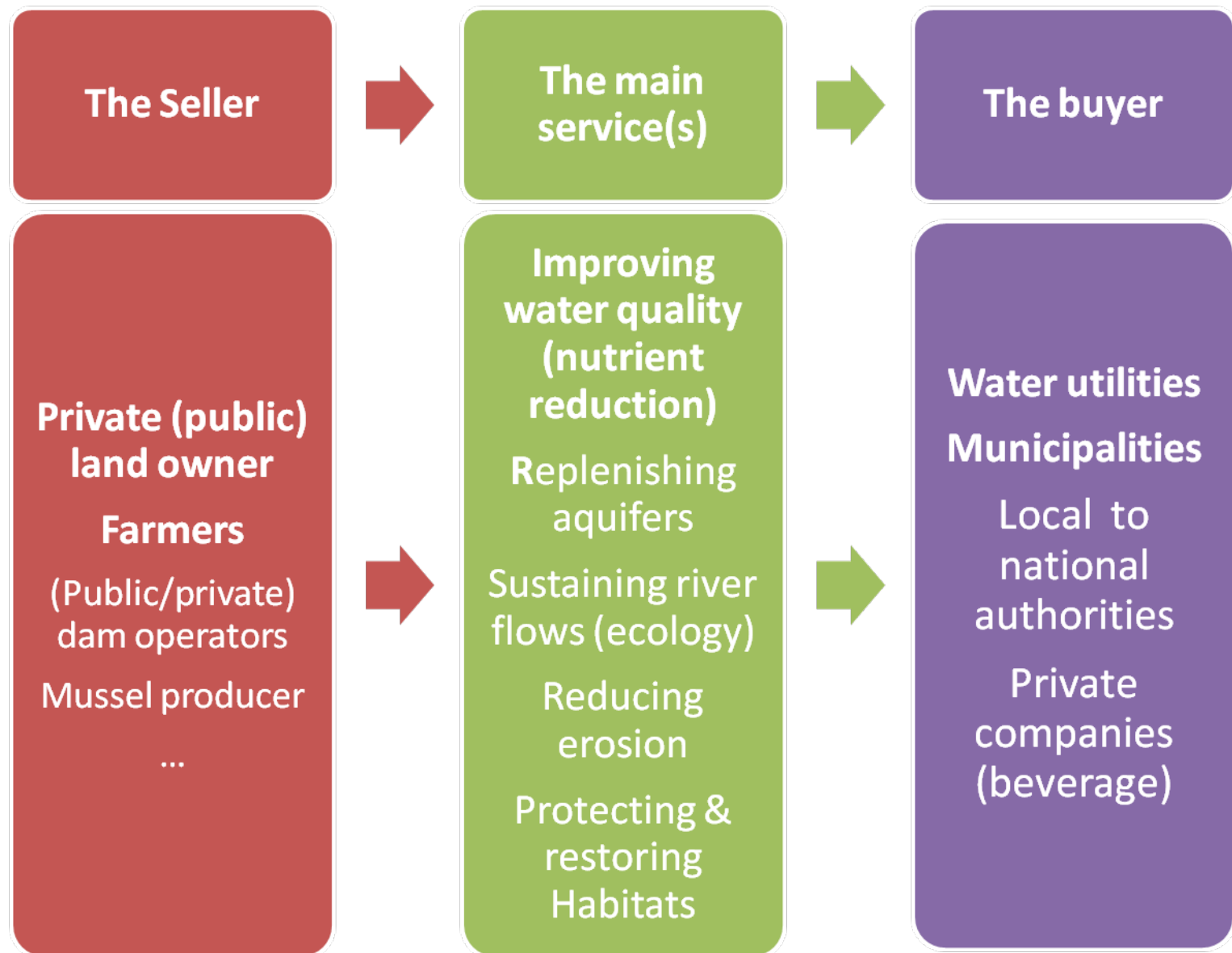
The Vittel case...

...Or more (Munich e.g.) since recently – as « things are moving »?

historically less receptive to market-based instruments and private sector involvement, higher reliance on regulation and national subsidies for “protection”

inefficient EU & national policies, high costs/prices, financing gap (WFD), MEA, overall awareness raised, policy drive to “more nature” (Water Blue Print, Green Infrastructure, NWRM.....)

Which characteristics for PES in Europe? (1)



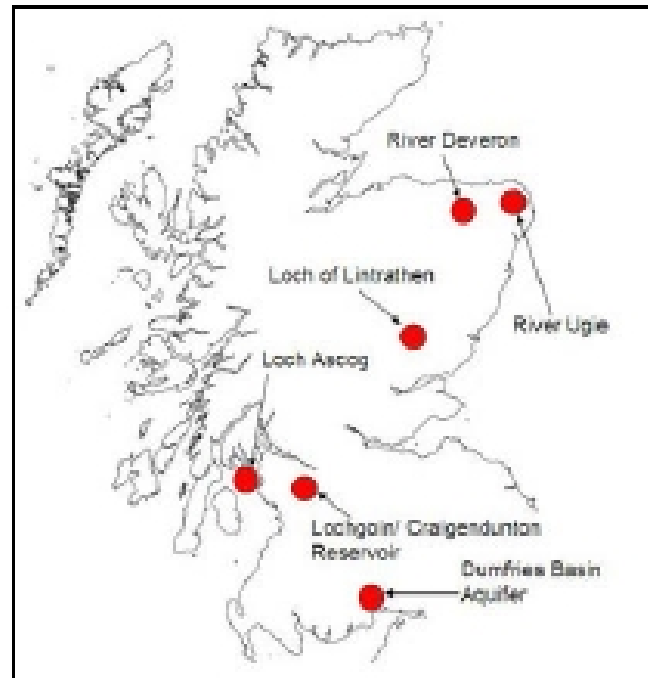
Visiting the Scottish Water SLMIS (1)

SLMIS = Sustainable Land Management Incentive Scheme
launched by Scottish Water

Operated in **6 catchments**...

... that are sharing problems of **diffuse pollution**

- Sediments
- Nutrients
- Faeces
- Pesticides



Thomson et al. 2014. Water-based payment for ecosystem services schemes in Scotland

Visiting the Scottish Water SLMIS (2)

The **different parties** involved

- Buyer: Scottish Water
- Seller: land managers (tenants or landowners)
- Intermediaries: catchment officers (SW), data analysts
- And indirectly: water consumers of Scottish Water

An **input-based scheme**, with payment once **actions** are implemented and checked

- Stock fencing and livestock watering
- Field management
- Pesticide control
- Reduced surface flows
- Petlands restoration
- ...

Visiting the Scottish Water SLMIS (3)

The ecosystem
services
provided



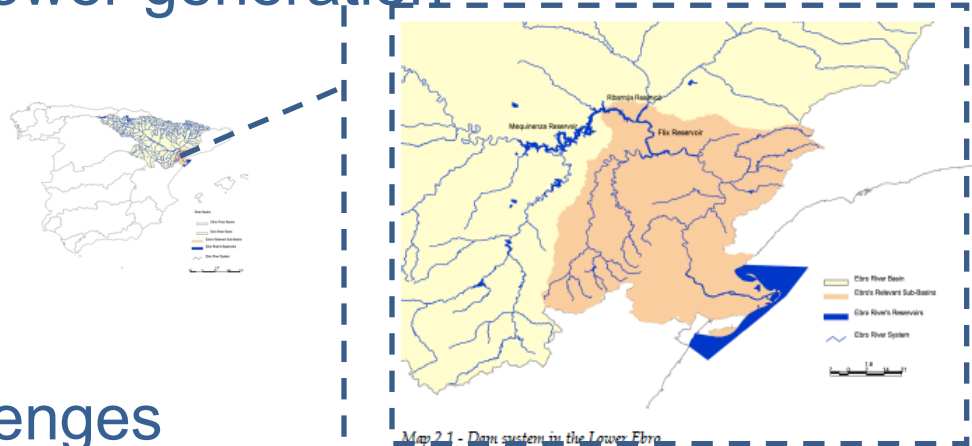
Carbon sequestration

	River Ugie	River Deveron	Loch of Lintrathen	Loch Ascog	Lochgoin/ Craigendunton Reservoir	Dumfries Basin Aquifer
Provisioning Services						
Water (quantity and quality) for consumptive use (drinking, domestic, agricultural & industrial use)	✓	✓	✓	✓	✓	✓
Water for non-consumptive use (power generation, for transport and navigation)	?	?	?	?	?	
Aquatic organisms for food and medicines	✓ (esp. salmon)	✓ (esp. salmon, sea trout, brown trout)	✓	✓ (esp. rainbow trout, brown trout)	✓ (esp. rainbow trout, brown trout)	
Regulatory Services						
Maintenance of water quality (natural filtration and water treatment)	✓	✓	✓	✓	✓	✓
Buffering of flood flows, erosion and flood control	✓	✓				
Cultural Services						
Recreation	✓	✓	✓	✓	✓	
Tourism (landscape beauty)	✓	✓	✓	✓	✓	
Existence value (personal satisfaction from free-flowing rivers)	✓	✓	✓	✓	?	
Supporting Services						
Role in nutrient cycling, primary production	✓	✓	✓	✓	✓	✓
Predatory/prey relationships and ecosystem resilience	✓	✓	✓	✓	✓	✓

Source: adapted from UNEP Freshwater Ecosystem Services (Chopra, 2005).

Moving South to sustain river regime in the Ebro (1)

Two dams built in the 1960s (1530 + 218 hm³) in the lower Ebro for hydropower generation



Water management challenges

- Significant changes in the hydromorphology of the river
- Macrophyte infestations (problematic for the operation of a nuclear plant and irrigation pumping stations)
- Reduction in sediment input to the delta (coastal driven rather than river driven)
- Plague of black flies (health)
- Costly actions for removing macrophytes

Carlos M. Gómez, Gonzalo Delacámara, Carlos D. Pérez, and Marta Rodríguez. 2011. Lower Ebro (Spain): Voluntary agreement for river regime restoration services

Moving South to sustain river regime in the Ebro (2)

The **different parties** involved

- Buyer: Ebro River Basin Authority (public intermediary for different interests of bundled services)
- Seller: ENDESA (hydropower company)
- Intermediaries: scientists, working group

An **input-based scheme**....

- Two controlled floods in spring and autumn (since 2003 onwards)
- Financial costs of the hydropower company paid by public institutions and estimated at € 100 000 /year (less than 0.1% of the energy produced)

Moving South to sustain river regime in the Ebro (3)

.. That is **effective to deliver environmental outcomes**

- Removal of macrophytes
- Habitats improvements
- Intermediaries: scientists, working group
- And indirectly: energy consumers

.... And also **socio-economic benefits** (potentiel costs from controlled floods not assessed)

- Pest prevention cost savings, improvements in water use efficiency, reduced habitat improvement costs
- Strengthening cohesion among interested parties

Supporting the production of non-alcoholic drinks in Germany (1)

The **Bionade** corporation:

- Production of non-alcoholic organically produced refreshment drinks

High interest in the **quality and quantity of drinking water** as the main ingredient of drinks

=> Establishment of a partnership for **supporting the development of « drinking water forests »**

IUCN. 2009. Economic value of groundwater and biodiversity in European forests

Supporting the production of non-alcoholic drinks in Germany (2)

The **different parties** involved

- Bionade: private company
- Seller: public and private forest owners
- Intermediaries: Trinkwasserwald e.v. (NGO)

An **input-based scheme**....

- Contract signed for a 20 year period
- At least 18 ha per landowner converted into « drinking water forest » (conifer monoculture forests to deciduous broadleaved forests)
- => additional 800 000 l/ha/year (after 10 years) that recharge aquifers in dedicated sites, additional improvements in water quality
- All costs (ground preparation, nursery, planting and fencing, replanting and maintenance...) covered by Bionade (one-time cost of 6800 €)

Selected pre-requisite for PES?

The usual culprits...

Environmental issues and ecosystem services clearly identified

Clear understanding of land use characteristics and opportunities (=> supply function of services)

Clear understanding of the users of/benefits from ecosystem services (the demand function)

Clear rules for the voluntary agreement and institutional certainty (reducing uncertainty)

A neutral intermediary? (that sometimes « covers » transaction costs)

Be innovative for reducing transaction costs (output-oriented scheme)

The dynamism & legitimacy of the buyer

A local « champion » within the group of service providers

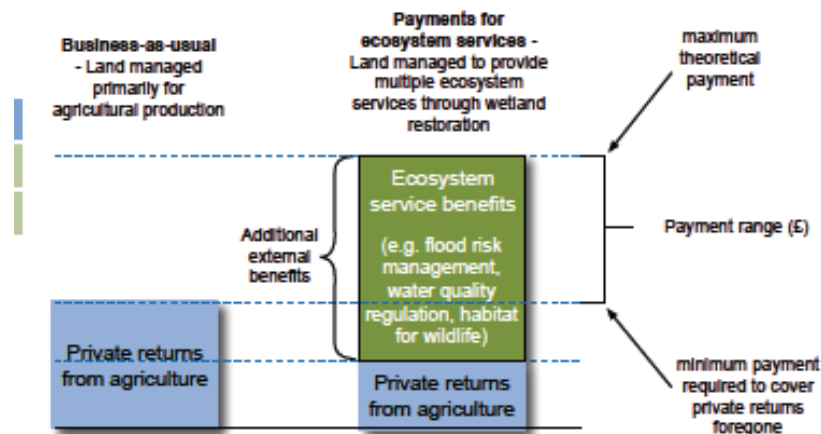
Transparency (but... not necessarily on everything – see the value of benefits)

Selected issues relevant to PES for water management in Europe? (1)

- PES in **combination** with.... (legal & technical – see the Case of Evian; nitrate tax and PES) as a means to reduce transaction costs, enhance effectiveness, increase acceptability
- **CAP subsidies, PES & State Aid**
- The potential of **widening the terms of the voluntary agreement** (water, other ecosystem services, market opportunities for forest & agriculture products)

Selected issues relevant to PES for water management in Europe? (2)

- **Demonstrating (assessing) the effectiveness** of PES (sound monitoring & evaluation)
- Assessing (ex-post) all **social, economic and environmental outcomes** (under different conditions – including non-water benefits)
- The **terms of contract** and the **rules of negotiation** (cost compensation, values not considered... but not a specificity)



Before ending the presentation

It's moving! Because of the policy push, the need for innovative & diverse financing (e.g. NWRM measures), the learning from first experiences...

But...

... let's ensure sound monitoring & evaluation is put in place (on environmental effectiveness – but also on other impacts, on processes, etc.) so lessons can be derived from real-life experiences

***Thanks for your
attention!***

For more information:

**EPI-Water web site
p.strosser@acteon-environment.eu**

Pierre STROSSER
(ACTeon)



PESMIX – Montpellier – Juin 2014

What will you find in this document?

	Page	Key illustrations
What are Economic Policy Instruments (EPIs)?	7	
Why should one consider EPIs	9	
<ul style="list-style-type: none"> Water management issues remain in Europe EPIs can bring benefits EPIs are already part of the regulatory framework EPIs are not "just theory" 		<ul style="list-style-type: none"> The use of EPIs can save money EPIs and European Policy Some Examples of EPIs
Which EPIs are relevant to a given context? Screening the available options	12	
<ul style="list-style-type: none"> Understanding your water policy challenges Key opportunities to introduce EPIs Considering the policy mix 		<ul style="list-style-type: none"> Key steps in screening EPIs Linking water policy challenges, opportunities and EPIs
What to do when designing EPIs	16	
<ul style="list-style-type: none"> Designing the delivery mechanism Identify necessary adaptations in the institutional framework Identify necessary adaptations in monitoring and evaluation 		<ul style="list-style-type: none"> Identifying the right level of payment for PES Examples of assessment methods
What to keep in mind during implementation?	20	
<ul style="list-style-type: none"> How "best" can it fit? EPIs as components of the policy mix How "optimal" can EPIs be? Balancing transaction costs and expected benefits How to make EPIs "resilient"? Accounting for uncertainty How to make EPIs "acceptable"... and understood? Establishing the right policy process 		<ul style="list-style-type: none"> Go for the full policy package The German effluent tax - a successful policy mix Assessment of transaction costs - a practical example Dealing with political acceptability
Rapid appraisal of selected instruments	26	
EPI Template 1 Incentive pricing	26	
EPI Template 2 Pricing water security	29	
EPI Template 3 Nitrate tax	32	
EPI Template 4 Payment for Ecosystem Services (PES)	35	
EPI Template 5 Payment for Flood Mitigation	38	
EPI Template 6 Water trading for water scarcity/drought	41	
EPI Template 7 Water emission trading (WET)	44	
EPI Template 8 Insurance addressing drought risk	47	
Glossary	51	