

**Development and marketing of non-
market forest products and services:
*main results of the FORVALUE study
and
lessons from existing payment schemes for
water related services***

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**Study on the Development and Marketing of
Non-Market Forest Products and Services**

DG AGRI, Study Contract No: 30-CE-0162979/00-21

Study Report



-November 2008-

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FORVALUE study

Full report available at:
[http://ec.europa.eu/agriculture/
analysis/external/forest_products/
Index_en.htm](http://ec.europa.eu/agriculture/analysis/external/forest_products/Index_en.htm)

Main objective

➤ The **main objective** was to acquire summarized information on the state-of-the-art in the field of valuation of and compensation for non-market forest goods and services in Europe.

Specific objectives:

- Produce an overview of all goods and services provided from and by forests in the EU and **identify non-market forest goods and services**;
- Produce an **overview of estimated values** of non-market forest goods and services;
- Provide an overview of **mechanisms compensating for provision of non-market forest goods and services** in use in the Member States;
- Review **alternatives for applying mechanisms** compensating for provision of non-market forest goods and services.

Case database

Database of **innovation cases in forestry** from different European countries including different non-wood forest products and different financing mechanisms

- Web-based and publically accessible;
- Maintained and complemented after project life-time under the EFI PC INNOFORCE;

Provides information on:

- Types of innovation (types of goods and services),
- Financing mechanism,
- Start-ups and non start-ups,
- Country, carrier, etc.

<http://cases.boku.ac.at/>

User: Standard User
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Innovation Cases in Forestry

Innoforce Database of Innovation Cases in Forestry

View Data




Please supply the data requested

Country	[ANY]
Innovation Type	[ANY]
Financing Method	[ANY]
Startup	[ANY]
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Entry Country	Title Description	Financing Methods	Innovation Type
2005-12 AUT	BIOSA network of forest owners for nature conservation BIOSA (Biosphere Austria) is an association of Austrian land owners that offers nature conservation services to public bodies or private organisations.	Public-private contracts	Process-horizontal Service-environmental
2005-12 AUT	Eco-sponsoring project "Still Waters" In the ecosponsoring project "Stille Wasser" ("Still Waters") 16 selected forest sites that feature water in many different kinds are offered for sponsoring.	Eco-sponsoring	Process-horizontal Service-environmental
2008-07 BEL	Urban Forest for Gent Afforestation project taking place in Gent uses different mechanism to acquire land from private forest and landowners. Governmental institutes buy, lease and exchanging land to create an urban forest for recreational use.	Subsidies Land purchase Land lease	Service-recreational
2008-07 FIN	Recreational Values Trading In Recreational Value Trading the landowner "sells" the aesthetic or the recreational value of his land to the purchaser. The contract is done privately in accordance to market prices. The landowner who sells the aesthetic service agrees together with the purchaser on the price, the rules, the services, and the time of the contract for each case separately.	Purchase of g&s	Service-recreational
2008-07 FIN	Natural values trading In the context of natural values trading, the landowner can establish permanently protected areas in their lands through voluntary schemes of Biodiversity Programme of METSO.	Subsidies Public-private contracts	Service-environmental
2008-07 FIN	Cooperation network Cooperation network is a collaboration between forest owners set up to reconcile the conservation, management and other uses of forests.		Process-horizontal Service-environmental

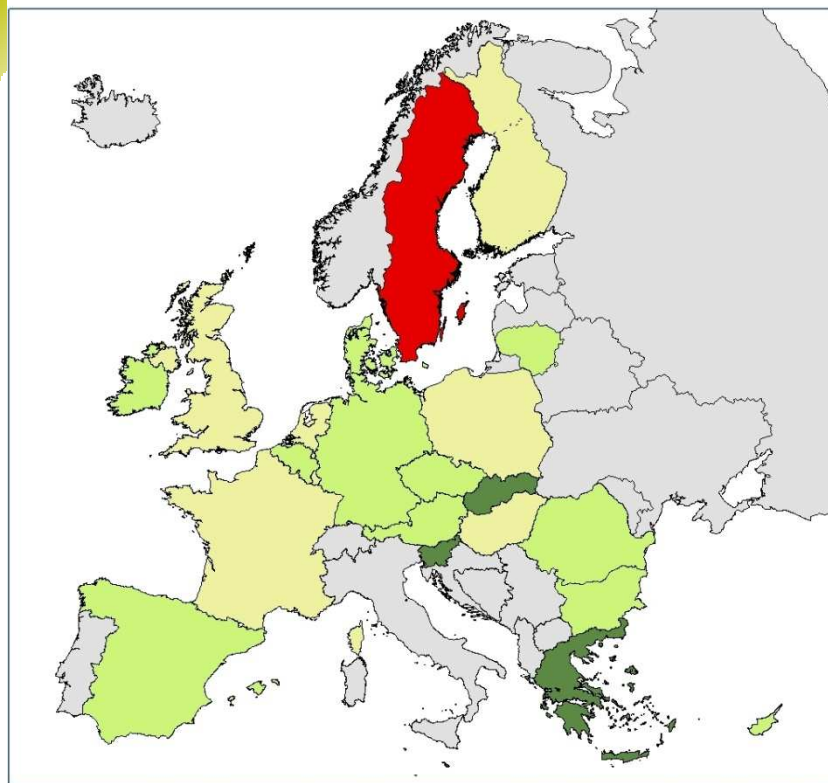
The work of EFI PC INNOFORCE is supported by the Austrian Ministry of Agriculture, Forestry, Environment and Water Management.

The set-up of this database was co-funded by EC DG Agriculture as part of the FORVALUE study (contract 30-CE-0162979/00-23).

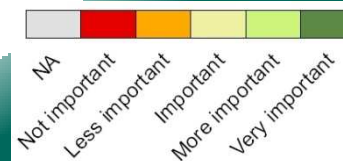
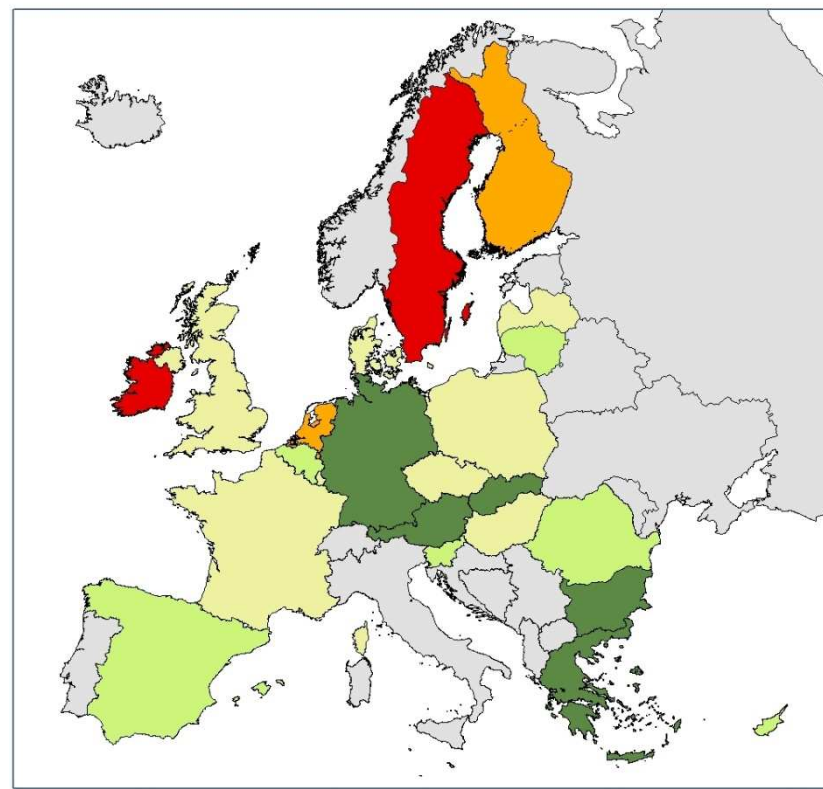




Forests and water

Importance of Water Purification



Importance of Water Regulation



Two cases of forest management actions targeted at improving drinking water quality :



- ✓ Vittel
- ✓ Saint-Etienne

An aerial photograph of a large dam with water cascading over its spillways. The water is a deep blue, and the surrounding landscape is a lighter blue. The dam structure is visible in the center, with multiple spillways. The image is used as a background for a presentation slide.

OTHER PAYMENT SCHEMES FOR WATER RELATED SERVICES

Types of payment schemes



Addressing **demand** for water



Provision of incentives to influence **water use** (e.g. avoid overuse)

E.g. *Tradable water rights* (Australia)



Addressing **supply** of water



Provision of incentives to upstream land users to influence **water quality and quantity**

E.g. *Payments for watershed services*
Water quality trading (USA, Australia, Canada)

Payments for watershed services

Provide financial or in-kind incentives to land managers and land stewards to adopt practices that can be linked to improvements of valuable watershed services



- Cash payments
- In-kind compensation
- Land purchase
- Financing of protection activities
- Technical assistance, education, watershed management planning

What drives the introduction of PWS?

- **Demand-driven schemes:**

- **Problem downstream** with water flow or quality, that is related to land management practices upstream
- Payments act as **incentives** to landowners to **change land-based practices**

- **Supply-driven schemes:**

- **Threats** to a protected area or natural ecosystems upstream and/or
- Land and resource management is considered **unsustainable**
- Payments from water users are possible **sources of funds** for the improvement to watershed practices

PWS scheme participants

Who makes payments?

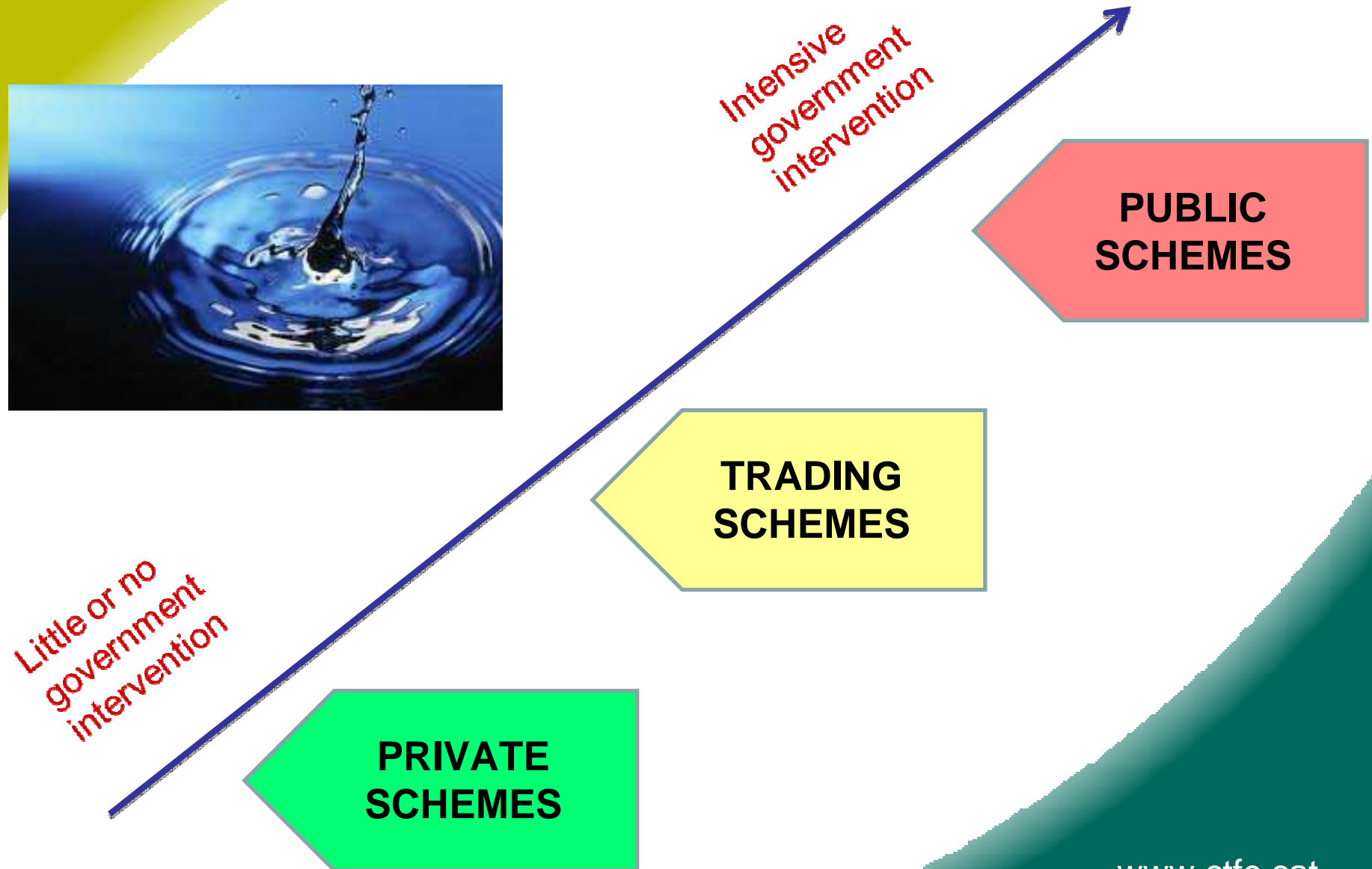
- Municipal water supply systems
- Irrigation systems
- Drinking water companies
- Hydroelectric power generators
- Other industrial users
- Populations in flood-prone areas

Who receives payments?

- Upstream landowners
- Informal stewards of the land



Types of PWS schemes



Private schemes

When?

- As **an alternative** to a (more costly) traditional water treatment
- Private interests need water quality or flow that goes **beyond regulatory standards**
- There is **no effective regulatory system** in place

Financing from private sources

- User fees
- Transfer payments
- Land purchase
- Cost-sharing arrangements
- Low-interest credit



France: Perrier-Vittel's payments for water quality

Columbia: Cauca Valley associations of irrigators' payments

Cauca Valley associations

- **Voluntary payments** by associations of irrigators and government agencies to private upstream landowners; land purchase by public agencies
- **Finance watershed management practices** in upland areas, that improve base flows and reduce sedimentation in irrigation canals
- Practices include reforestation, erosion control on steep slopes, land purchases and protection agreements for springs and stream buffers, economic development in upland communities
- Association members pay a water use fee of \$1.5-2/litre on top of an existing water access fee of \$0.5/litre

Some remarks

- Do not require regulatory reform as such
- Contracts based on intensive **negotiations**
- **Participatory process early on** to negotiate actions and payments
- **Public-sector institutions** in a supporting role
- Likely to occur when the water services provided are **private goods** (drinking water supply, electricity, agricultural products)
- **Limited to the particular watersheds** upstream of their investment, where...
- ...a **strong link between land-use actions and watershed service** can be demonstrated
- Take place only if the **monitoring and transaction costs** are covered by the market price or can be subsidised

Open trading schemes

When?

- In countries with **stronger environmental regulation**, where...
- Government sets a strict water quality **standard** or a **cap** on total pollution emissions
- It is **not important who takes the action**, as long as the overall standard is met or the cap is not exceeded
- Emission **credits** are earned based on the production of emissions lower than the standard set

Financing sources:

- Companies or landowners that buy credits because it is cheaper than changing their own compliance
- Credits can be created via a range of land-based best management practices



USA: nutrient trading

Australia: reduction of water salinity

Irrigators financing upstream reforestation

- Land-clearing has exacerbated **salinization problems** in many parts of the Murray-Darling basin; because the lost vegetation no longer takes up water and transfers it back to the atmosphere, so watertables rise and bring dissolved mineral salts to the surface
- **New South Wales State Forests** (state government) launched a pilot project in which downstream irrigation farmers are purchasing **transpiration credits** from State Forests, who are planting trees on state land upstream.
- The objective is to benefit irrigation farmers and other water users
- Irrigators pay \$40/ha/year for 10 years to State Forests

Some remarks

- Usually operate **at the watershed level**, therefore
- ... water quality trading programs are usually **quite fragmented**
- **Authority** for trading schemes come from state, federal or local **regulatory agencies**
- Require **adequate regulation** to create demand for pollution reduction credits and **effective monitoring**
- Requires **upfront investment** of resources for developing a trading scheme

Public schemes

- **Government or a public-sector institution pays** for the watershed service
- Payments done to private landowners and private or public resource managers

Financing sources

- General tax revenues
- Bond issues
- User fees

USA: New York City watershed management program

Mexico: Mexican Forestry Fund

Examples (1)

- Mexico: Mexican Forestry Fund (\$20 million)
 - to pay Indigenous and other communities for the forest ecosystem services produced by their land (own approx. 80% of all forests in Mexico)
 - Under design since 2002, guided by a consultative group with government, NGO and industry representatives
 - Purpose: to promote the conservation and sustainable management of natural forests, leverage additional financing, contribute to the competitiveness of the forest sector, and catalyze the development of mechanisms to finance forest ecosystem services
 - Identification of priority conservation sites
 - Proposal to pay \$40/ha/year to owners of deciduous forests in critical mountain areas, and \$30/ha/year to other forest types

Examples (2)

- NY City's watershed management program
 - Alliance between federal, state and municipal governments to protect water quality in the Croton and Catskills watersheds that supply the city with drinking water
 - “whole-farm planning” programme
 - The City pays both the operating costs of the program and the capital costs for pollution control investments on each farm as an incentive to farmers to joint
 - Watershed Agricultural Council provides technical assistance to custom-design pollution control measures for each farm
 - Measures are selected for their pollution control benefits and are designed into and integrated with farmers' business plans and management practices

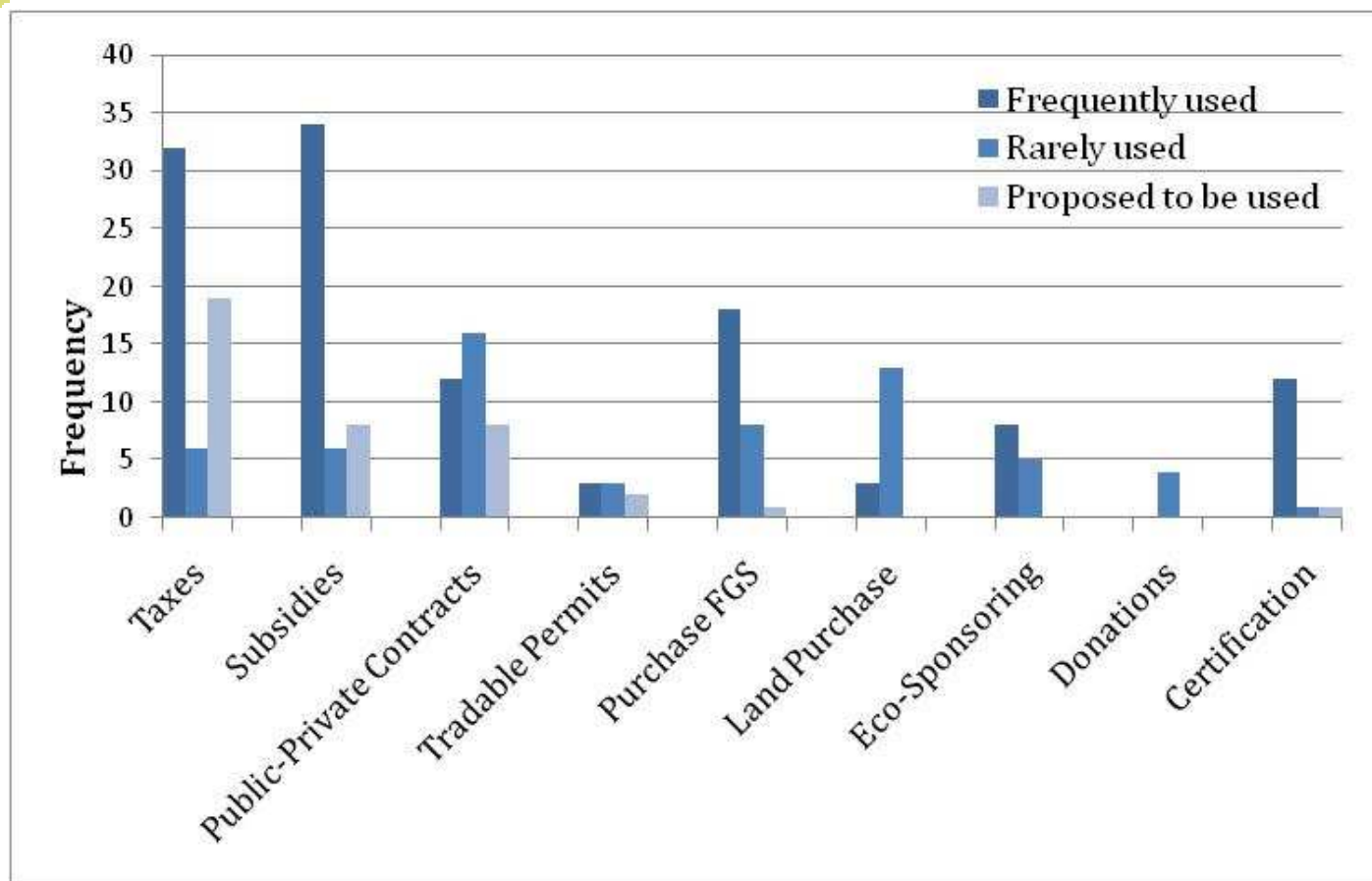
Examples (3)

- Brazil, state of Paraná: an ecological tax to finance payments to those municipalities that take action either on their own or in cooperation with private landowners to protect watersheds

Some remarks

- **Intensive negotiations** between downstream and upstream governments, businesses and citizens' groups are necessary
- Significant **changes in the regulatory environment** needed
- Expected to remain the most common financial mechanisms used to protect water related ES

Use of mechanisms in the EU



Source: FORVALUE study

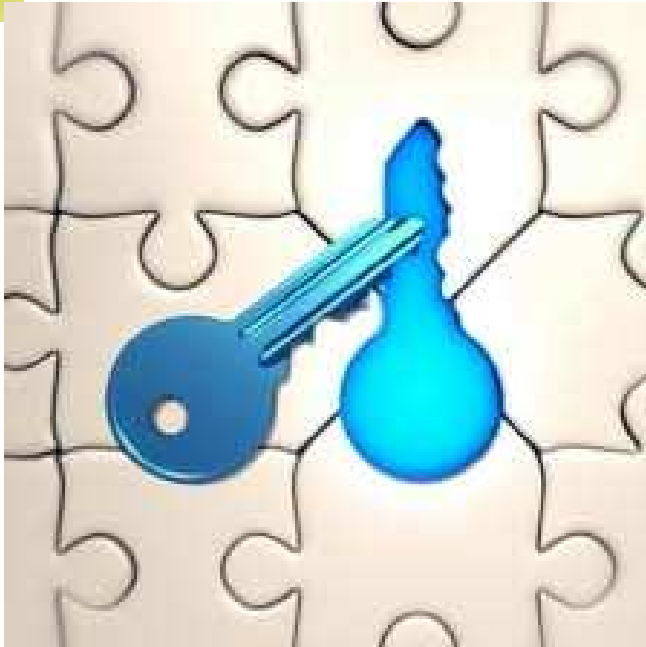
... for water related payments

- **Demand** is the main driver of watershed markets
- **Intermediary-based transactions** are the most common; used as a way of pooling demand and for risk-sharing and fundraising
- Mainly **local markets**
- Where **watersheds cross political boundaries**, other types of risks may prevent payments from occurring
- **Benefits are highly variable** from one watershed to the next
- **The opportunities** for watershed protection payments may not exist or may be extremely limited:
 - In remote, very large, or sparsely settled watersheds
 - In countries with poorly defined or ineffective legal and regulatory frameworks
 - Lack of information about the source of the ecosystem service and who exactly benefits from it

General conclusions

- A stronger **engagement of land owners/managers, interest groups and extension services** is required for an increased development and marketing of forest goods and services
- The **engagement of political-institutional level actors** is required for public and private mechanisms:
 - a) Developing further public and mixed public-private mechanisms, e.g. concerning taxes, subsidies, public-private contracts or tradable permits; and
 - b) supporting land owners in developing further private mechanisms (**innovation support**).
- Proposed types of action are:
 - i) cross-border **exchange of information/experiences**,
 - ii) support **cross-sectoral cooperation**, and
 - iii) provide **seed-money** for the development of new market opportunities.
- Improve **awareness** of existing policy measures for innovation support under the Rural Development Programme, through capacity building, education, training, and other information measures.

Key success factors of PWS



- Effective local participation
- Organisational structure and monitoring
- Proper external support
- Security about land tenure
- Legal framework and public policies
- Political context

Thank you!

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