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Forests for water - Payments for Ecosystem Services

A practitioner's perspective

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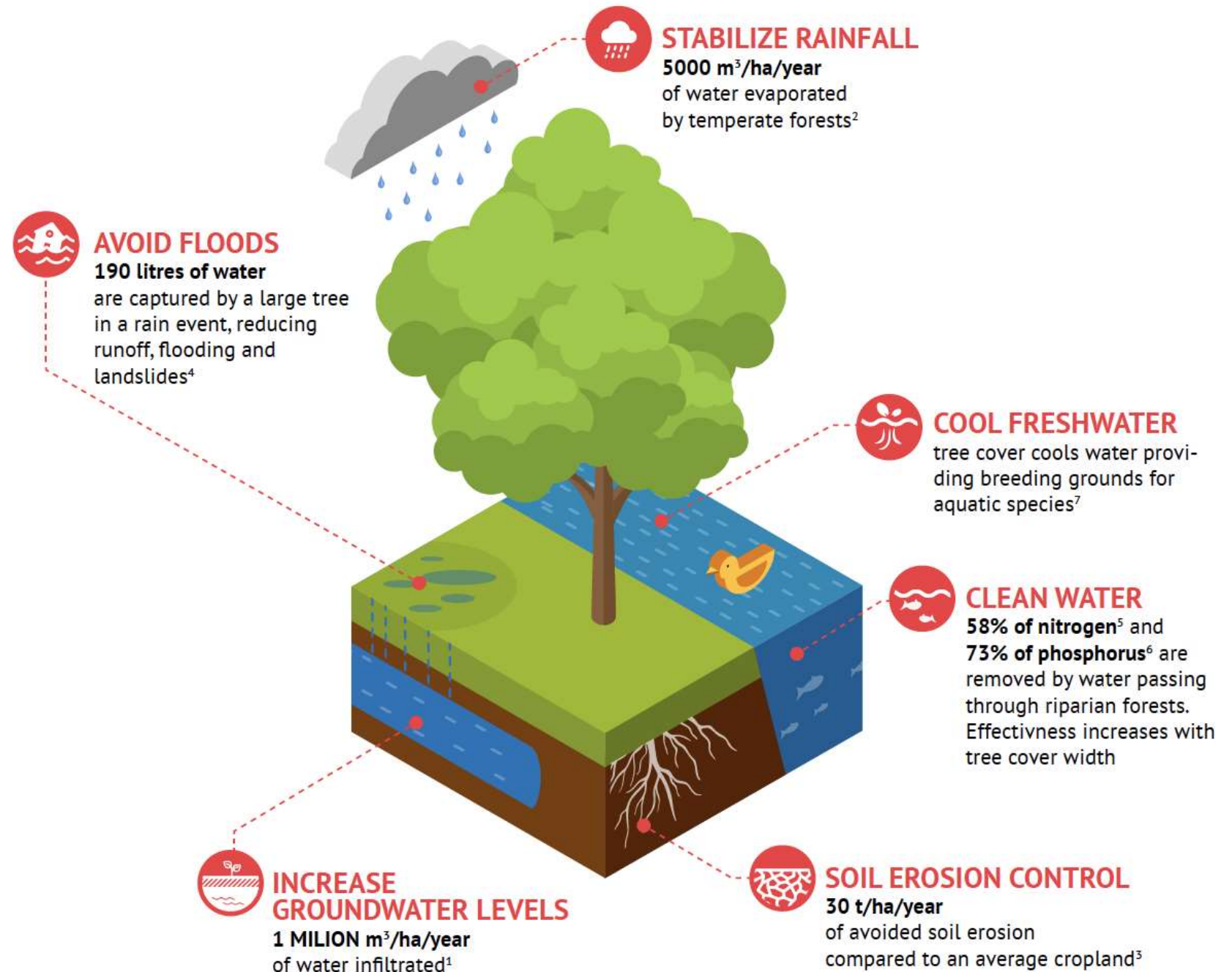


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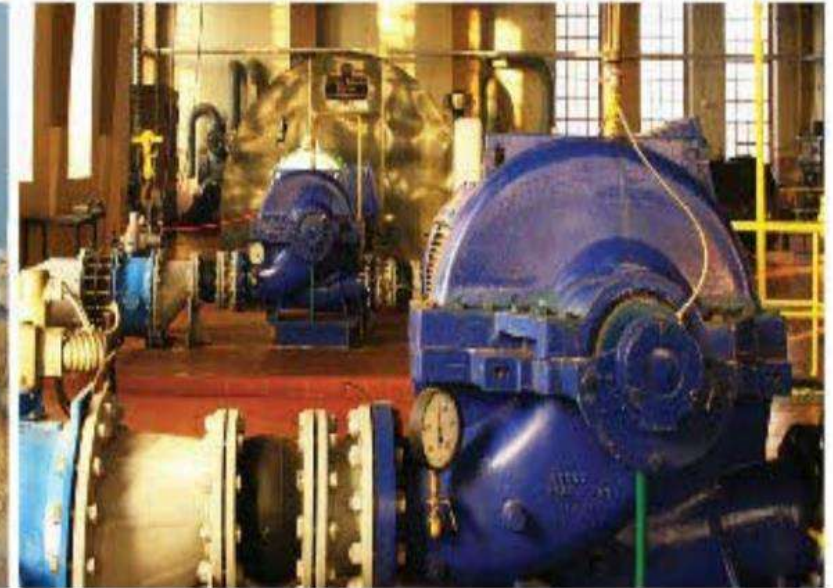


Why financing forest for water?



Global trend: integrating green and grey infrastructures/approaches

To increase resilience of the build environment



Problem: floods



Applications: riparian forests and floodplain

An aerial photograph of a forest landscape. The forest is composed of various types of trees, some with yellowish-brown foliage and others with green. A prominent yellow rectangular box is overlaid in the top-left corner, containing the text 'Problem: lower water table'.

Problem: lower water table

Applications: Forest infiltration areas

An aerial photograph showing a landscape with a large body of water on the left, a dense forest in the center, and agricultural fields on the right. A road or path runs through the forest. The water is a light blue-green color, and the forest is a dark green. The agricultural fields are a mix of green and brown, indicating different crops or stages of growth. The sky is not visible.

Problem: pollution from agriculture

Forest-water safeguard areas to protect drinking water source

A photograph of a forest fire. Tall, thin trees are visible, some with green needles and others bare. Intense orange and yellow flames are rising from the ground and between the trees, creating a hazy, smoky atmosphere. The fire is widespread, covering the forest floor and reaching up the sides of some trees.

**Problem: forest fires and
water quality**

**Applications: Forest management for resilience to wildfire in water
catchments**

**Problem: dam
sedimentation**

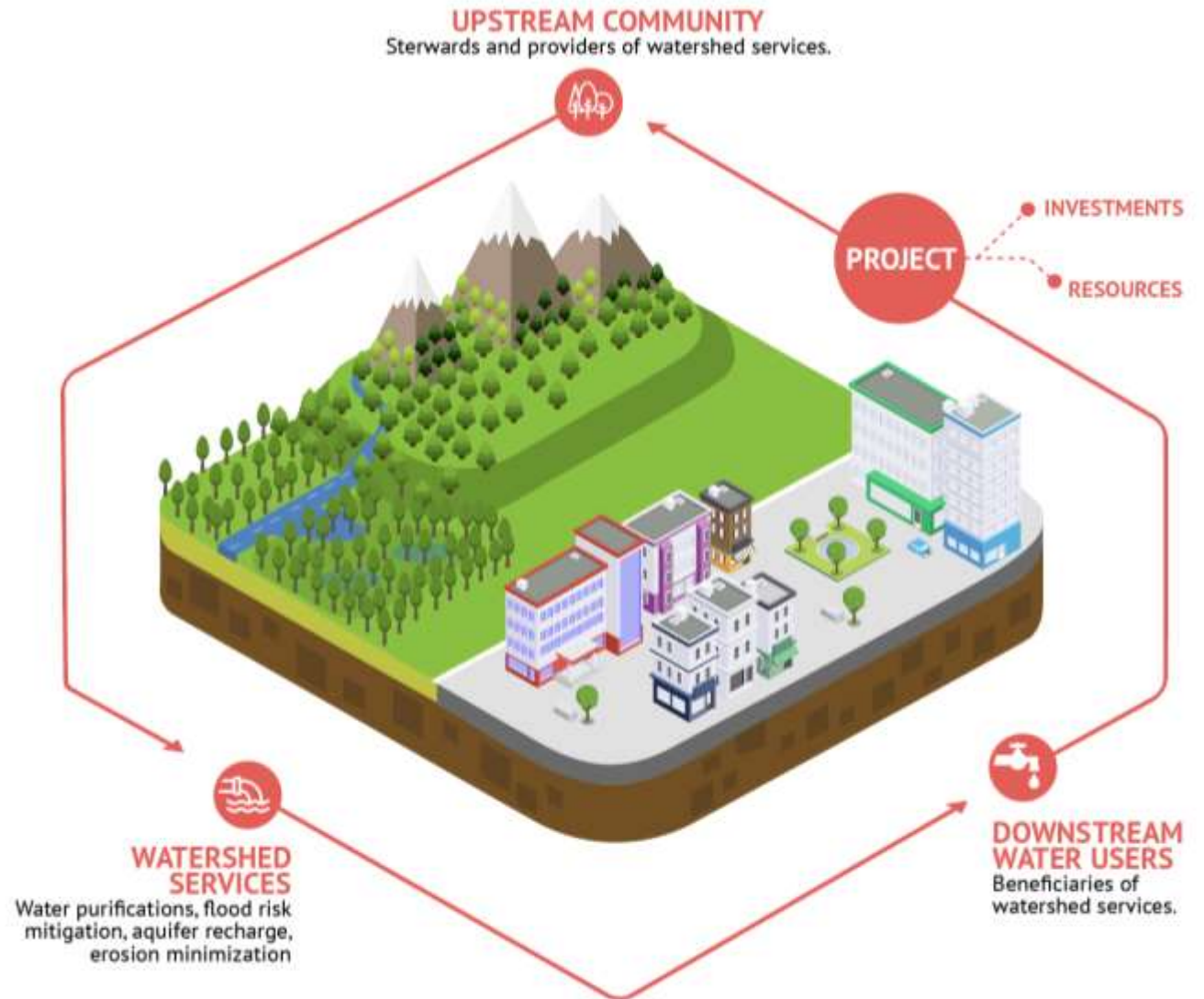
**Improved forest management to avoid erosion and dam
sedimentation**

How do we finance forests for water?

Payments for Watershed Services (PWS) are market-policy tools that allow:

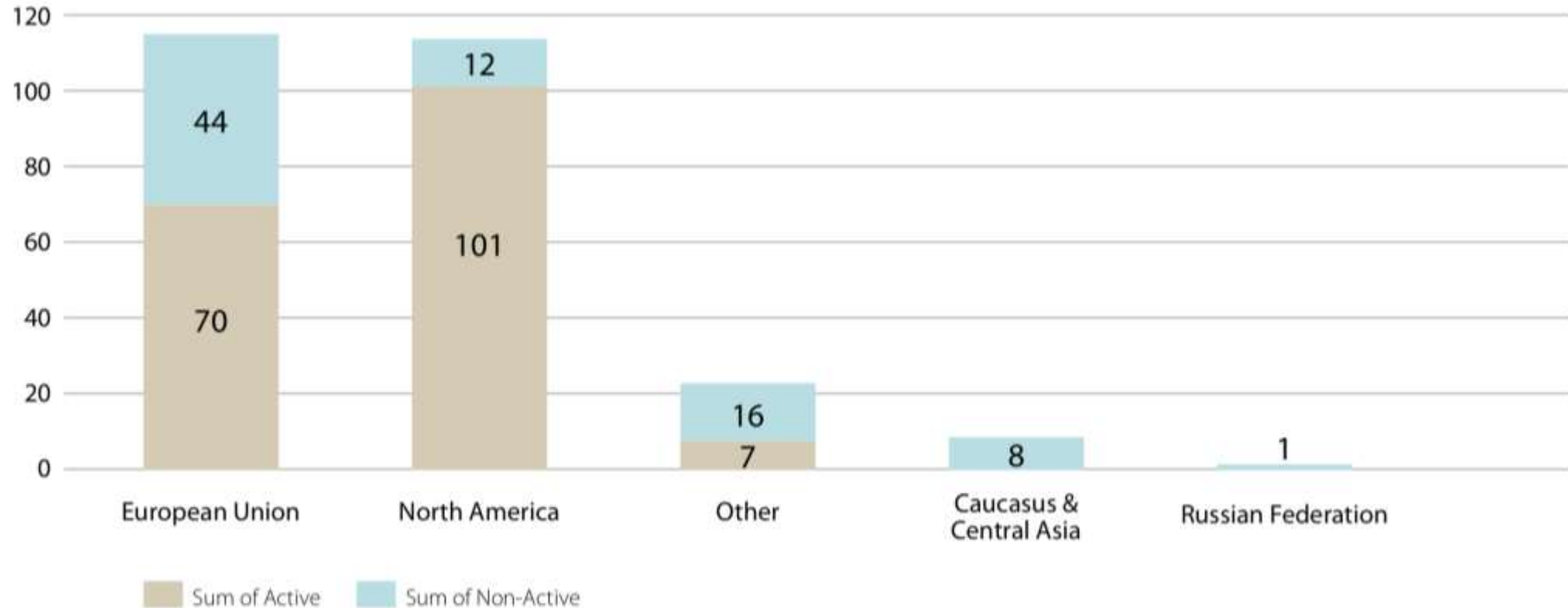
- *transfers of resources between social actors, which aims to create incentives*
- *to **align** individual and/or collective land use decisions*
- *with the **social interest** in the management of natural resources*

(Muradian *et al.*, 2010).



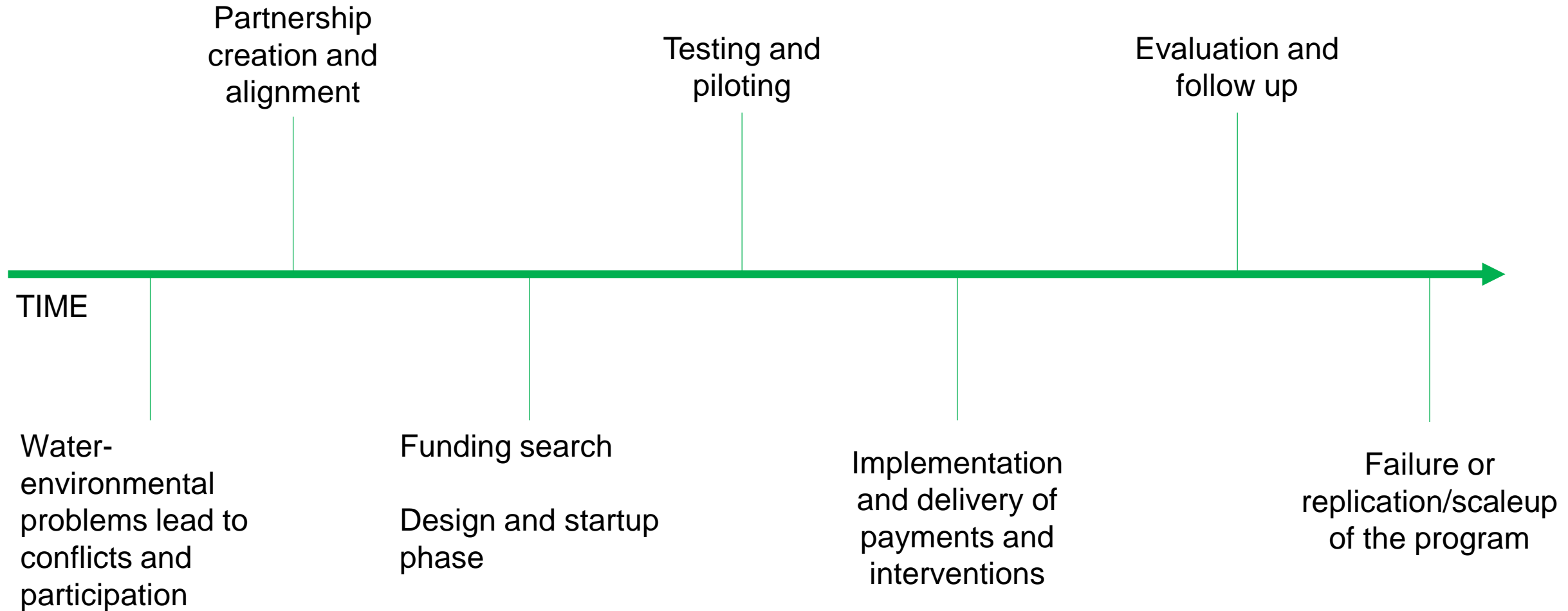
Geographical distribution of forest PWS

Number of active and non-active (design, pilots, unknown) PWS schemes by UNECE regions











Source: Leonardi, 2015.

The «life» of PWS

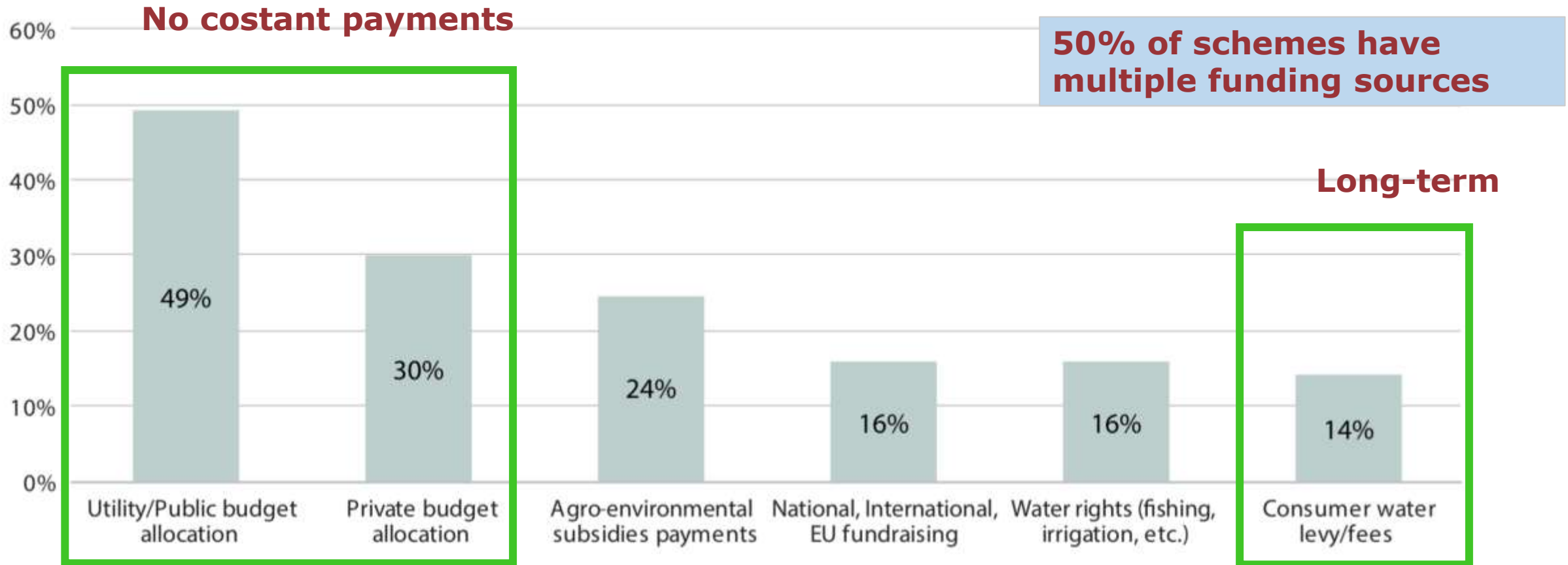


PWS drivers

Table 4: User-Driven Watershed Investment Programmes: Buyer Motives by Sector				
Rank of motive		Public sector/ Government	For-profit/ Private Sector	Water Utility (Public or Private)
	1.			
	2.			
	3.			

 To mitigate risks to water resources or infrastructure from climate change or natural disasters  To enhance brand value/ demonstrate leadership on water resource challenges  To mitigate risks to water resources or infrastructure from land-use decisions in the basin  To deliver social co-benefits, such as sustainable livelihoods or drinking water access, delivered by project	 To ensure supply chain resilience  To meet compliance with regulations  To address physical risks, such as declining water quality or supply disruptions affecting business model  To avoid or reduce capital costs of drinking water or wastewater services
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Funding sources



11 typologies of quasi-PES in the water sector

Programme typologies	Sub-type	Major drivers	Main financing sources
Public – non-voluntary	Compensation for legal restrictions	Increase acceptance of legal restrictions through compensation of opportunity costs	Public budget allocation or scope taxes
Public regulated	Agri-environmental schemes	Public goods provision and partial cover of adoption of management practices	Common Agricultural Policy
	Public bilateral agreements	Local public goods provision	Budget allocation
	Water charge - public bilateral agreements	Investing on water quality. Charging customers for water related services via water charges	Scope taxes
	Regulated trading initiatives	Regulatory compensation	Compensatory trading schemes
Compensatory private initiatives	Trading initiatives	Standardized water footprint voluntary compensation	Compensatory trading schemes
	CSR offsetting	CSR water footprint voluntary compensation	Private sponsor
Private voluntary payments	Avoided impacts bilateral agreements	Avoid use of chemical inputs through paying for opportunity cost incurred (no associated benefits)	Private budget allocation
	Multiple benefits partnerships	Improve hydrological service provision through natural capital maintenance and improvement. Based on partnership model	Multiple sources and instruments
	User funded schemes	Charging final beneficiaries to invest on targeted hydrological services	Beneficiary pays fund
	Environmental benefits – bilateral agreements	Improve hydrological service provision through natural capital maintenance and improvement. Based on bilateral agreement	Private budget allocation

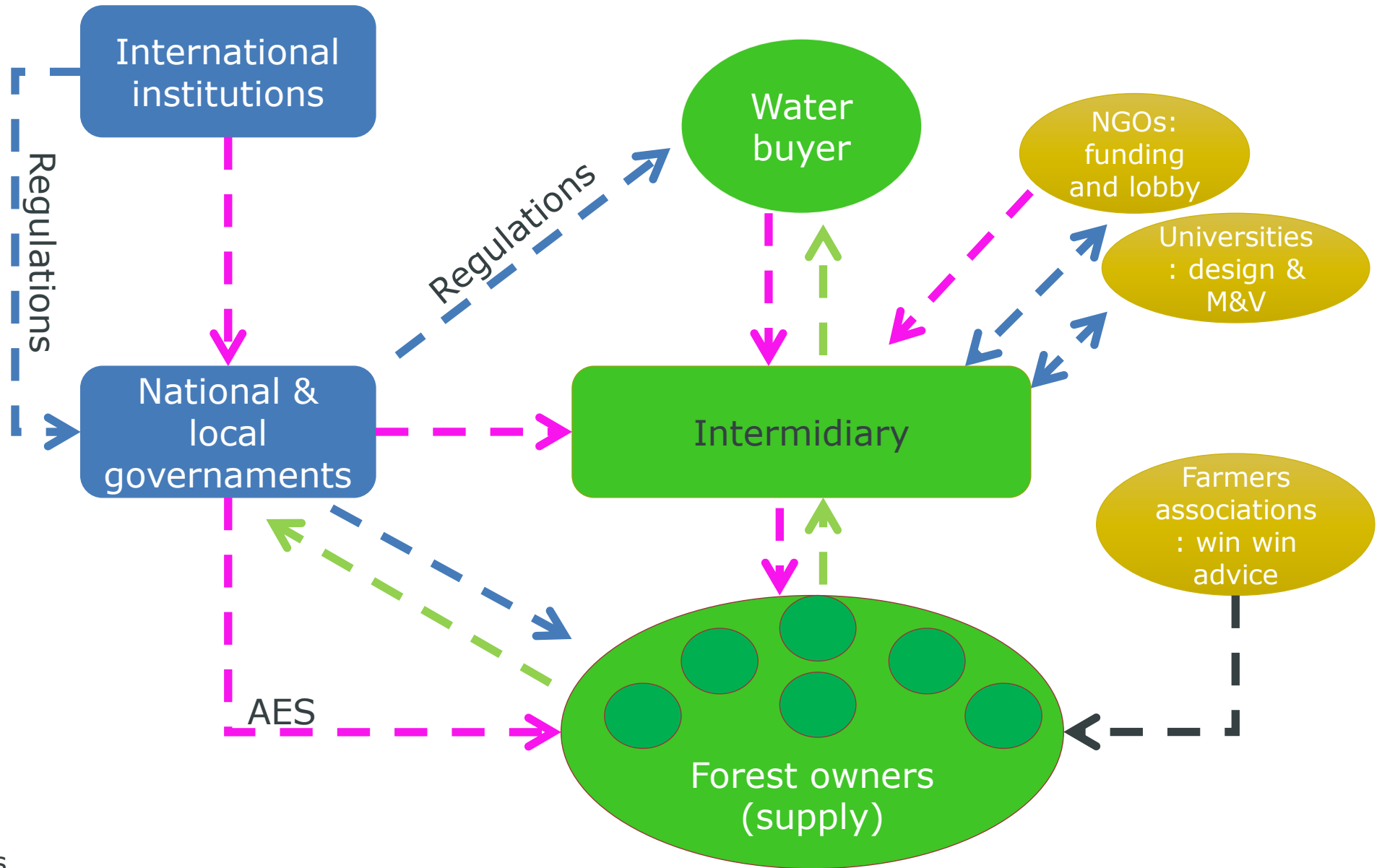


Charges through water bill



Multiple benefits partnerships

Example: Multiple benefits partnerships



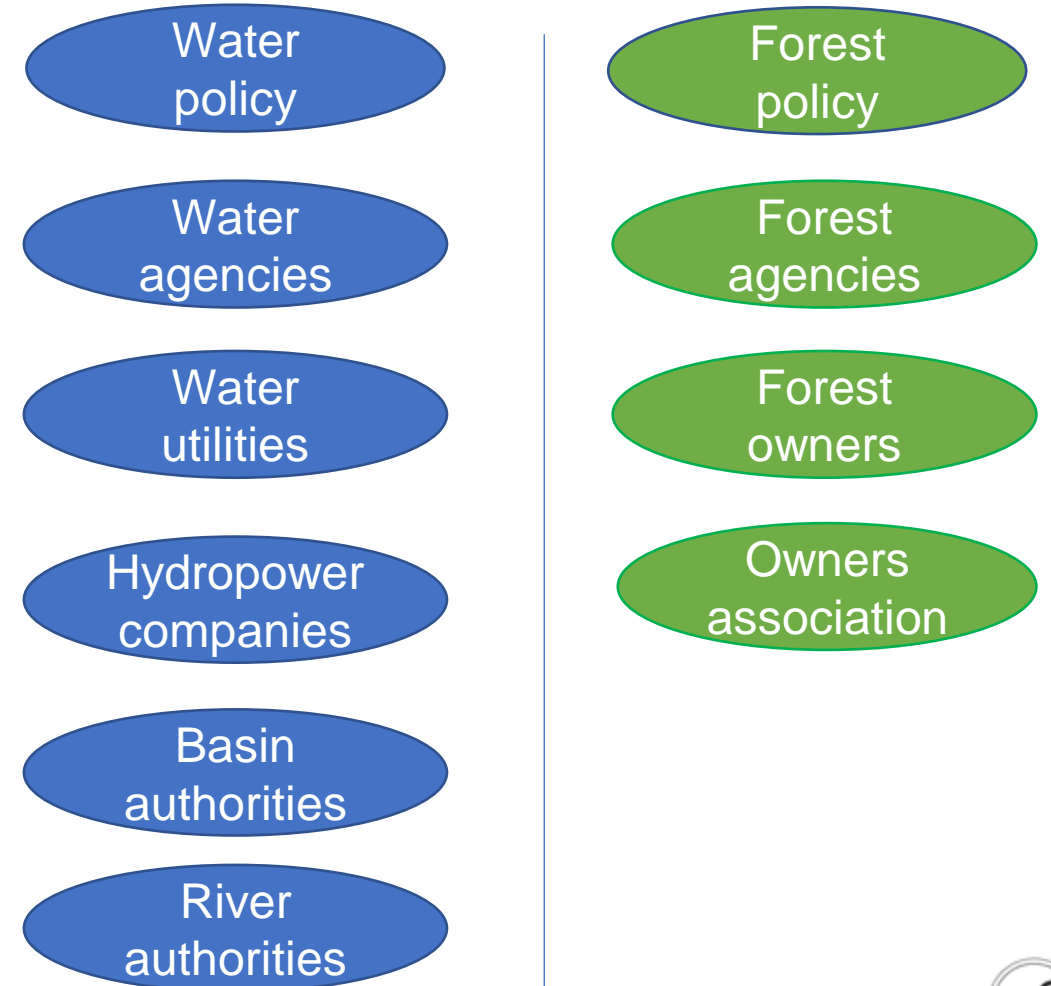
Example: LIFE Brenta 2030 - A forest-water charge PES

- **Art. 9 of Water Directive**
– polluter/user pay principle and inclusion of Environmental and Resource Cost (ERC) in the tariff system
- **National Decree 39/2015**
allows the cost recovery for measures related to water conservation and mitigation of environmental impacts through the water bill



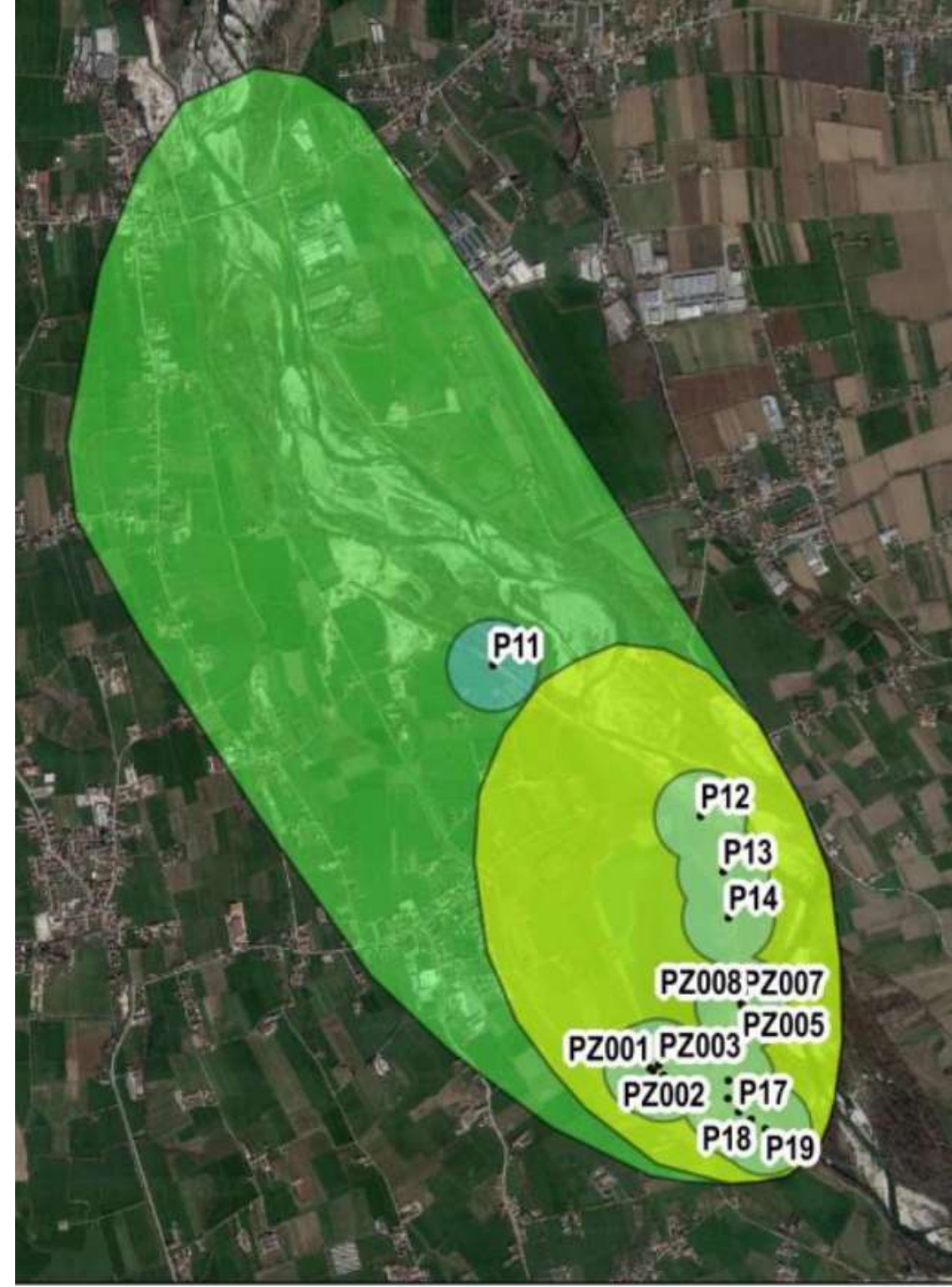
Recommendation: policy link and governance are key factor

- **Link to key policy goals** > Water Directive, Natura 2000, Biodiversity strategy and national norms
- **Alignment/integration** of water and forest/land use institutions and policies
- **Ensure participation of key actors:** the main obstacle is culture (grey vs green)
- Use PES as one tool (of a set) not as final aim



Recommendation: be science-drive but keep it pragmatic

- Targeting is essential, but starting is even more important
- Often most suitable land is not available
- Start with 1-2 suppliers/farmers (early adopters) and work with followers



Recommendation: ensure co-benefits

- One single ecosystem service is not able to sustain the whole project cost
- Integrated approach with carbon, recreational and biodiversity benefits is needed



Recommendation: delegate monitoring to certification schemes

Successful case studies
have shown the integration
with:

- organic farming;
- FSC forest management certification.

