Forest Research

PESFOR-W User Manual &Action Plan workshop aims & structure & Woodlands for water Payments for Ecosystem Services schemes

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Workshop Structure & Aims

1) User Manual Developing woodlands for water PES

- **any refinements/improvements you would suggest?**

2) Action Plan Developing woodlands for water PES

- to create incentives across Europe for targeted tree planting to reduce agricultural diffuse pollution of watercourses to deliver water quality goals
  - **What elements would you suggest including**
    - **England/Wales/Scotland/N.Ireland/UK contexts?**
    - **Wider European/international contexts?**
  - **What are the key barriers?**
    - **how can they be overcome?**

3) Next steps:

- **Approach & potential location(s) for UK pilot(s),**
- **Research needs, scoping a proposal & funding options?**

Workshop Programme

10am-10.15 am	**Welcome & Introduction to the aims and structure of the workshop, & examples of existing Woodlands for Water PES schemes (Gregory Valatin)**
10.15am-10.45am	PESFOR-W COST Action User Manual steps & approach (Tom Nisbet)
10.45am-11.30am	Discussion of User Manual & potential refinements (all)
11.35am-12.05pm	Developing an Action Plan (all)
12.05pm-12.25pm	Discussion of next steps: approach, potential location(s) for pilot(s), possible research needs, scoping a proposal and funding options (Tom & Gregory)
12.25pm-12.30pm	Wrap-up

Workshop 'ground rules'

- If you wish to ask a question, use 'chat'
- If you wish to speak, use 'raise hand'
- Switch your microphone off when not speaking

- To encourage open discussion, the workshop is not being recorded
- Contributions to be kept confidential to those participating in the workshop

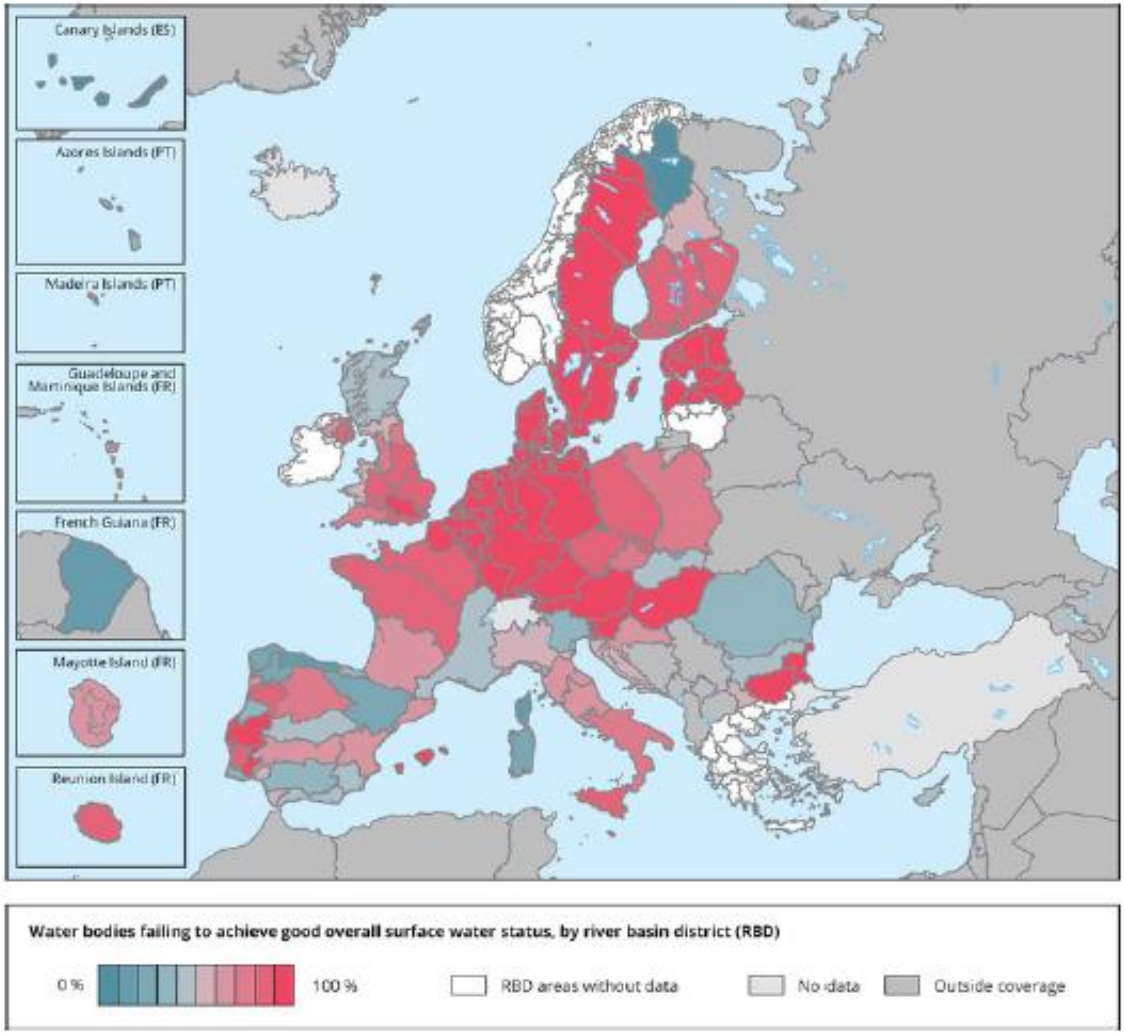
COST Action 15206

COST Action CA15206
PESFOR-W
Payments for Ecosystem Services Forests for Water

Research network (Oct 2016-April 2021) **aiming to improve Europe's capacity to use Payments for Ecosystem Services (PES) to achieve Water Framework Directive (WFD) targets & other policy objectives through incentives for planting woodlands to reduce agricultural diffuse pollution to watercourses.**

Status of Europe's Waters

Over 50% of EU surface water bodies are currently below Good Chemical & Ecological Status



Source:

European waters -- Assessment of status and pressures 2018
[https://www.eea.europa.eu/publications/state-of-water]

Impact of Diffuse Pollution

Diffuse pollution remains a major problem: 90% of RBMPs identify agriculture as primary source

Annual Indicator Report Series (AIRS)

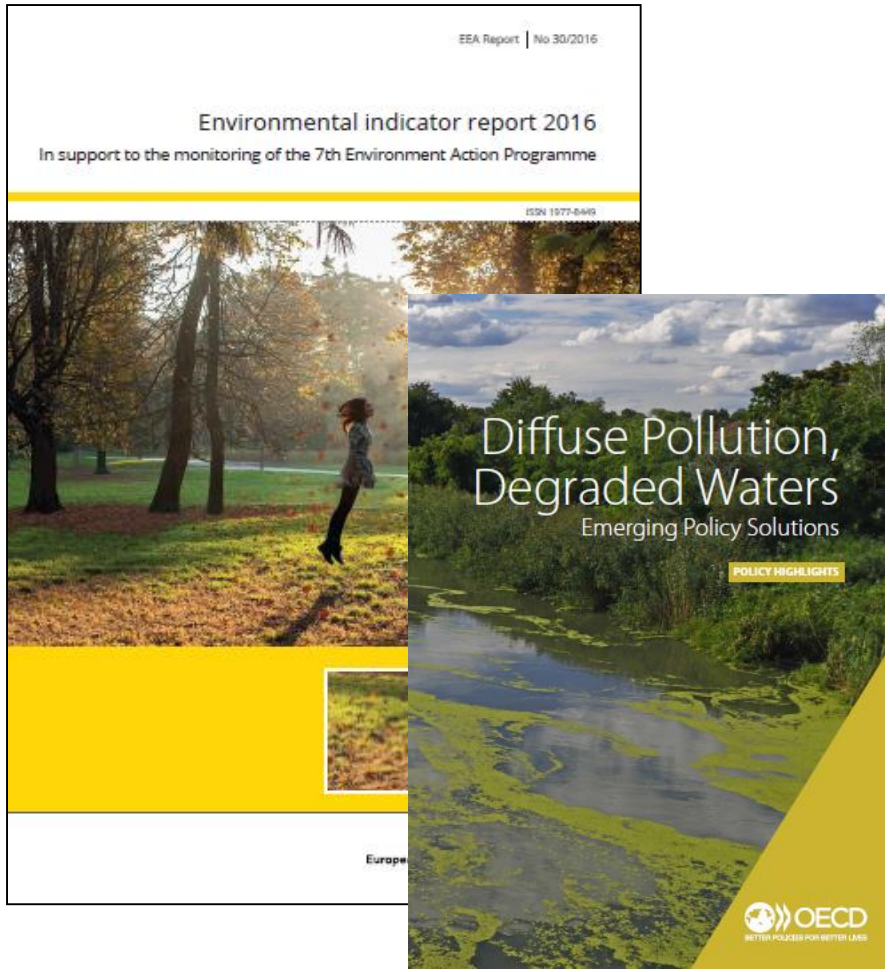
European Environment Agency

Natural capital

Surface waters

Indicator	EU indicator past trend	Selected objective to be met by 2020	Indicative outlook of the EU meeting the selected objective by 2020
Status in surface waters	NA[1]	Achieve good status of transitional and coastal waters and freshwaters — Water Framework Directive	

Considering the large proportion of surface waters failing to meet 'good' ecological status, it is unlikely that the objective of achieving good status of waters will be met by 2020



How can tree planting help?

- **Increasing recognition of need for land use change to meet WFD targets;**

- **Woodland cover:**
  - **protects the soil**
  - **removes/reduces fertiliser & pesticide inputs**
  - **intercepts pollutants**
  - **protects river banks**
  - **offers other benefits**

PESFOR-W: inter-disciplinary network

Economics

Landscape Architecture

Social science

Geography

Forestry

Hydrology

Agriculture

Ecology

Climatology

Natural science

Geochemistry

Biochemistry

Engineering

A network spanning 40 countries

COST Countries:

- Bosnia and Herzegovina
- Bulgaria
- Czech Republic
- Croatia
- Estonia
- Hungary
- Latvia
- Lithuania
- Luxembourg
- North Macedonia
- Montenegro
- Poland
- Portugal
- Romania
- Serbia
- Slovakia
- Slovenia
- Turkey
- Austria
- Belgium
- Denmark
- Finland
- France
- Germany
- Greece
- Ireland
- Italy
- The Netherlands
- Norway
- Spain
- Sweden
- Switzerland
- United Kingdom

Near Neighbour Countries:

- Morocco
- Jordan
- Tunisia
- Ukraine

International Partner Countries:

- China
- Japan
- New Zealand

International organisations:

- European Forestry Institute
- UNECE/FAO

PESFOR-W: Research Coordination Objectives

1) **Characterize & evaluate governance models**

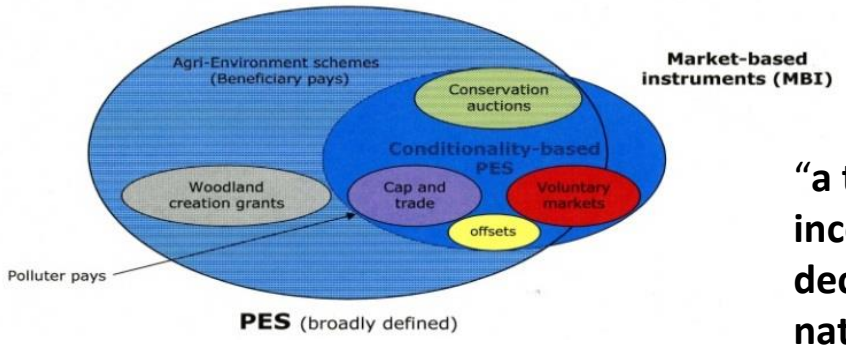
2) **Evaluate environmental effectiveness of targeted woodland planting**

3) **Forests for water PES Case Study repository**

4) **User Guidance** on quantifying the effectiveness of tree planting to reduce diffuse pollution

PES broadly defined

Payments for Ecosystem Services (PES):



"a transfer of resources between social actors, creating incentives to align individual and/or collective land use decisions with the social interest in the management of natural resources" (Muradian *et al.*, 2010).

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Payments for Ecosystem Services Forests for Water

Woodland for Water PES defined as:

- **(i) transfer of resources** between at least 2 actors;
- (ii) transaction **explicitly targeted at improving water-related services**;
- **(iii) payment for actions related to trees** either:
  - –primarily **for water services; or**
  - –**for bundled (including water) services**

NB includes land purchase for water protection where tree planting reduces the market value of land

Denmark: Land purchase & afforestation:

- E.g. Odense municipal water company:
  - reducing risks of future **pesticide contamination of groundwater**
    - targeting protection of most sensitive areas for groundwater recharge
  - purchases nearby **land** & **swaps with local farmers**
  - secures **permanent land use change to forests** (legal change)
  - **ownership** of protected land **transferred to a partner organisation**
    - **for less than market value** of agricultural land

    (i) Municipality for tree planting as an area for local **recreation**

    (ii) Social enterprise for Timber production + recreation access
      - Lower land cost strengthens business case for afforestation

    (ii) State forest agency for Timber, recreation+
      - Lowers costs of land purchase for afforestation
  - Creating **'water forests'**

Rennes (local authority), **France** :

- Purchase & afforestation of 71.5 ha to reduce nitrate pollution
  - costs €6300/ha (€14700/ha including land purchase)
- Comparison over 10 years:
  - **Protection costs** (including agricultural measures):
    - €0.16/m3 (1/4 due to woodland planting)
  - **Costs avoided:**
    - €1.50/m3

➢ Case study of Rennes

An efficiency indicator of this approach:

Tree planting for water quantity & quality + other benefits (Bosco Limite, Italy):

- **Pilot project** initiated by Etifor (spin-out company of University of Padua)
- **increasing water infiltration to groundwater**
- **landowner paid by multiple organisations for different ecosystem services**
  - **Including carbon**
    - **2.5 ha of woodland planted**
    - **example of 'stacking' & higher farm income than previously under agriculture**

Reforestation to protect water quality

Baden Forest & Müller AG, Switzerland

- after hurricane Lothar (1999) destroyed large areas of a 500 ha forest
- the community made a contract with the local **brewery** Müller AG to restore & manage water protection forest zones
    - payments of about 10000 CHF (€8800) per year
    - five year contracts

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Payments for Ecosystem Services Forests for Water

Waidhofen drinking water protection zone (river Ybbs catchment, Austria)

- **reducing risks to water quality**
  - **chemical**
  - **sediment**
- **Pilot project:**
  - **forest owners to be paid annually by the local government for implementing best practices**
    - **30 forest owners (1069 ha)**
- **part of Interreg project PROLINE-CE**
  - led by Austrian Federal Ministry of Sustainability & Tourism

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Payments for Ecosystem Services Forests for Water

Tree planting & forest management

Land Management (reducing animal stocking density, **tree planting**, forest management …)**:**

Vittel, France (Nestle Waters):

- local farmers contracted to adopt practices to reduce pollution of groundwater
  - **additional land provided to farm rent free**
- **persuading local farmers to plant trees challenging:**
  - **many have devoted much of their working lives to removing trees to increase agricultural production.**

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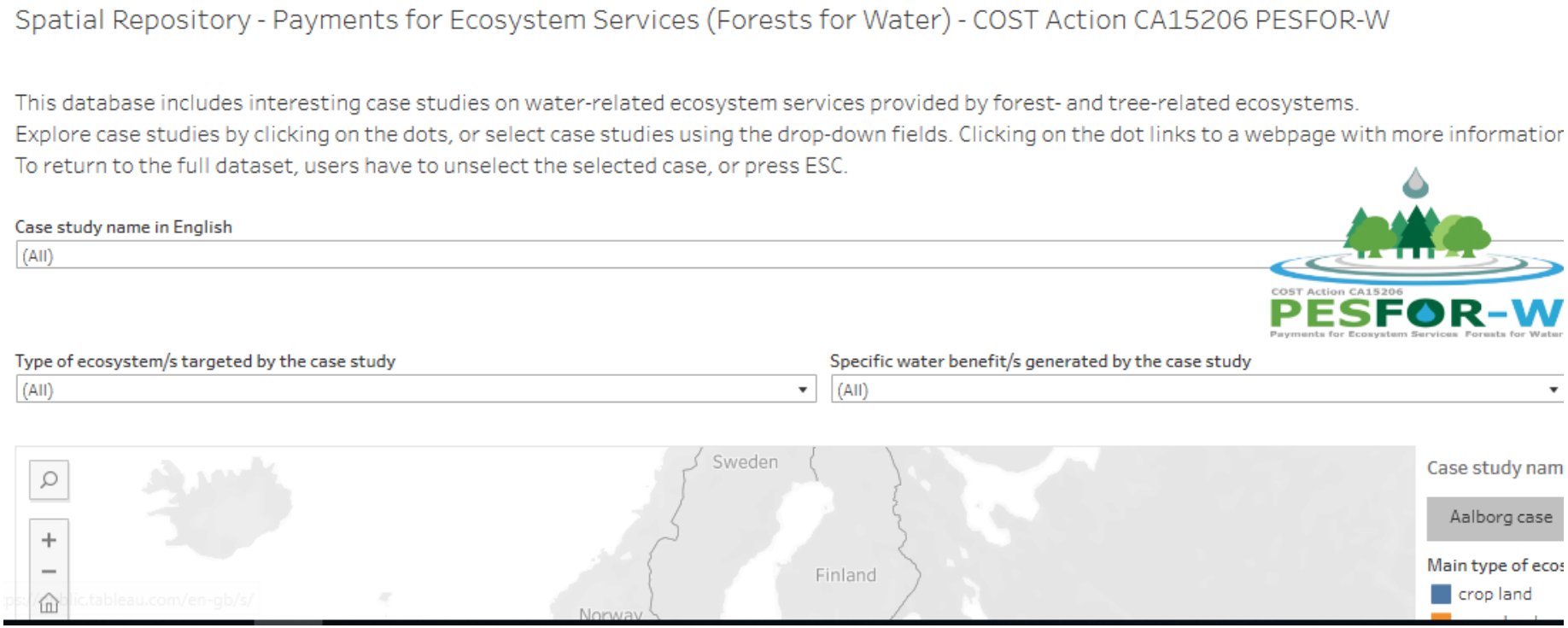
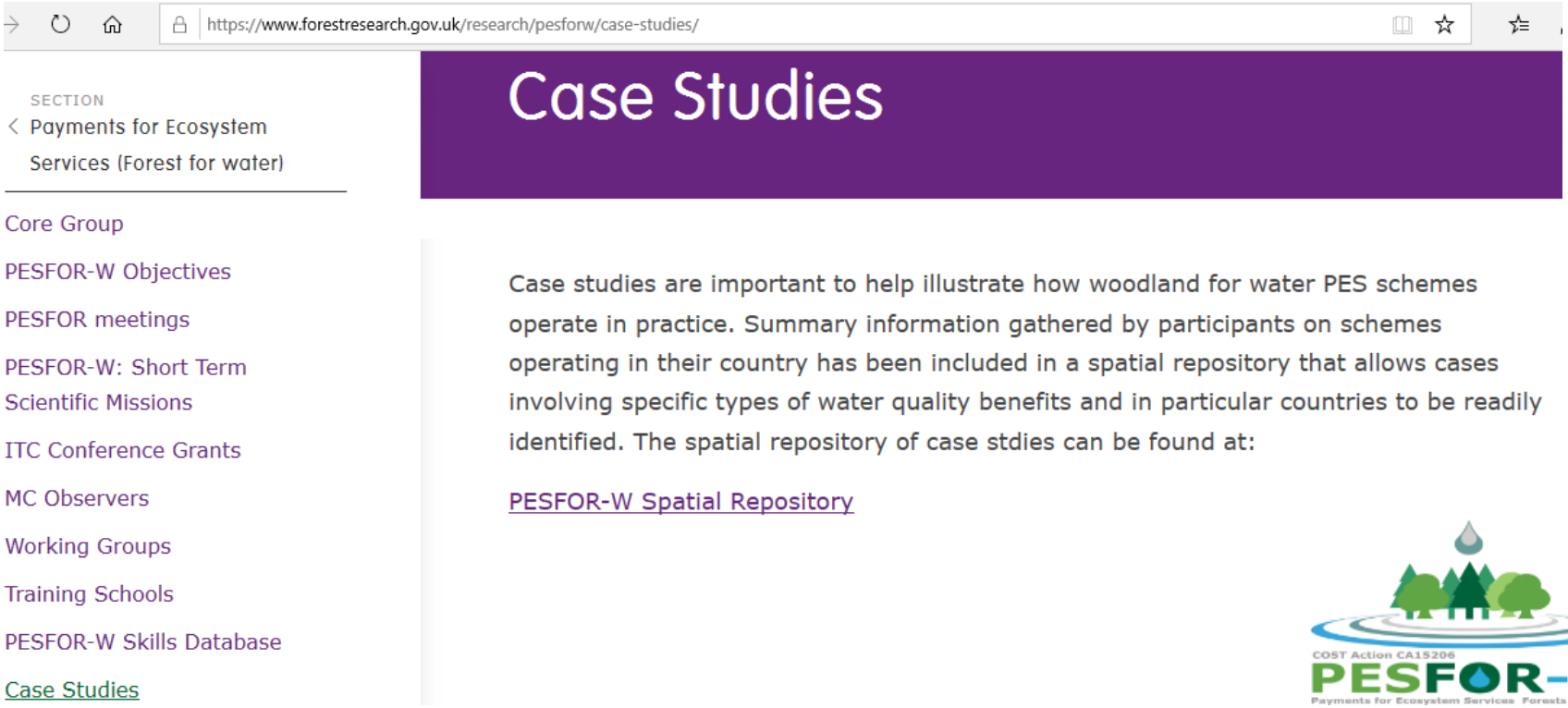
PESFOR-W case studies



https://public.tableau.com/profile/rik.de.vreese#!/vizhome/SpatialRepository-PaymentsforEcosystemServicesForestsforWaterCOSTactionCA15206PESFOR-W/Spatialrepository

Link from PESFOR-W web pages



https://www.forestresearch.gov.uk/research/pesforw/case-studies/

PESFOR-W plans

Final months (to mid-April 2021):

- **Stakeholder workshops**

– to test the **User Guide** with practitioners prior to launch

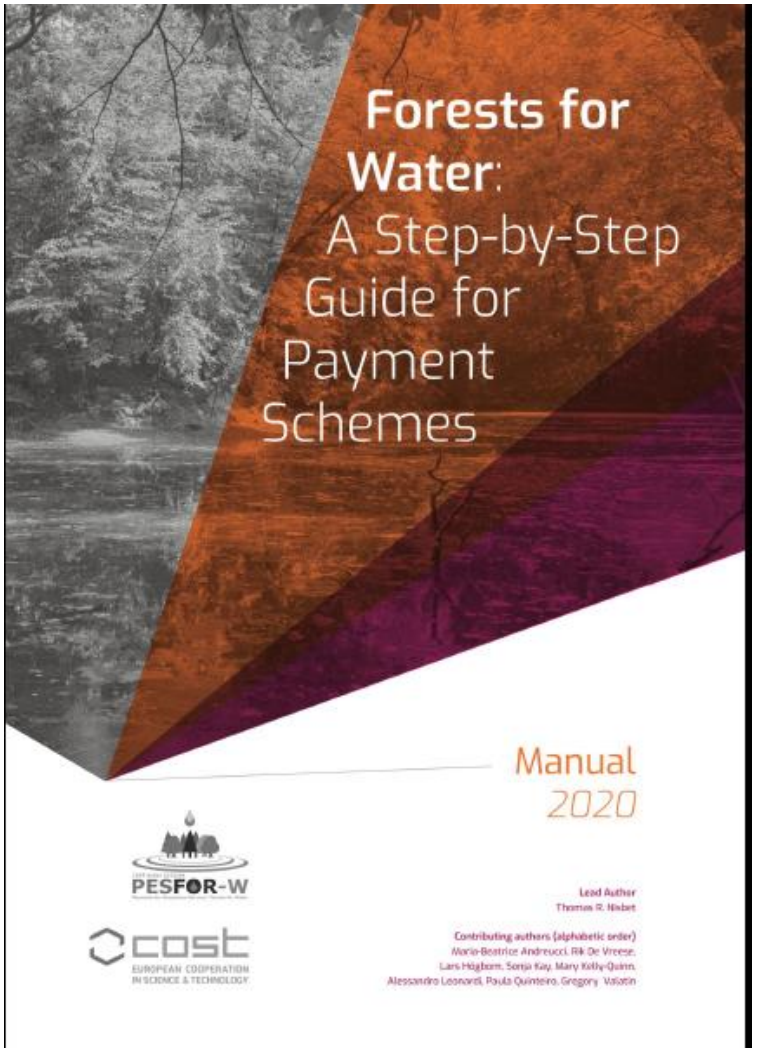
– Suggestions for elements to include in an **Action Plan** on developing woodlands for water PES schemes

- **Final conference** online: 17th-18th March 2021 (tbc)
- **Submitting journal articles** (incl Cost-Effectiveness Analysis)
- COST Innovators' Grant proposal (tbc)

– to run activities across Europe for further 12 months from Nov 2021

– Towards a **Woodland Water Code?**

Guidance on developing woodlands for water PES schemes:



Any refinements you would suggest?

- E.g. elements missing?

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