Forest Research

Payments for Ecosystem Services - Forests for water quality benefits (PESFOR-W): Introduction

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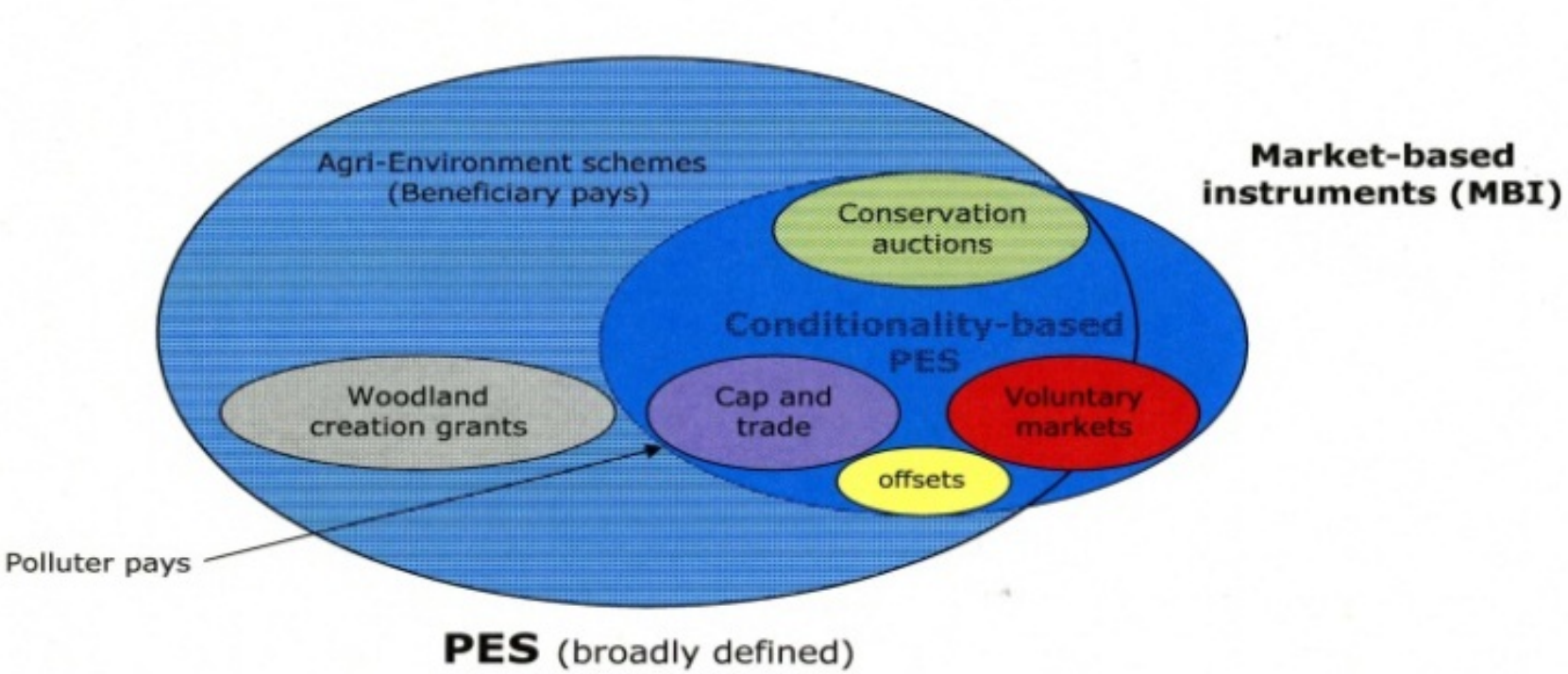
Overall Aim

PESFOR-W **aims 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.

PES: broad definition

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).

PES definition

Definition adopted by PESFOR-W based upon 3 criteria:

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

Woodlands for water PES

Woodland creation & water quality related **PES schemes**

Country	Name of scheme(s)	Aim of woodland creation
Denmark	1) **Aalborg** city council **groundwater quality improvement** 2) Vigersted Groundwater Scheme 3) Water Supply Act Reforestation Levy	Protection of groundwater reservoir.
France	4) **Massif de la Nerthe** (Coca Cola) 5) **Rennes** (city council) 6) **Vittel** (Nestle Waters)	Protection of water quality for drinking water / mineral water production.
Germany	7) **Lower Saxony** Oldenburg and East-Frisia Water Association 8) **Munich water supply** - Mangfall Valley - Stadtwerke München	Reduction in nitrate pressure on the groundwater supply from agriculture / increasing water quality for drinking water
Switzerland	9) **Henniz** SA	Increasing water quality
UK	10) SCAMP (United Utilities) 11) English woodland grants scheme - New woodlands for water 12) Forestry grants scheme (Scotland) - Woodlands for water	Increasing water quality for public water supply

Participation in PESFOR-W

31 COST countries have signed MoU:

ITCs:

- *Bosnia and Herzegovina*
- Bulgaria
- Czech Republic
- Croatia
- Estonia
- **Hungary**
- Latvia
- Luxembourg
- fYR Macedonia
- Montenegro
- Poland
- Portugal
- Romania
- Serbia
- Slovakia
- Slovenia

Other:

- Austria
- Belgium
- Denmark
- Finland
- France
- Germany
- Greece
- Ireland
- Italy
- The Netherlands
- Norway
- Spain
- Sweden
- Switzerland
- United Kingdom

NNCs (4):

- **Morocco**
- **Jordan**
- **Tunisia**
- **Ukraine**

IPCs (2):

- **China**
- **New Zealand**

IOs (2):

- **European Forestry Institute**
- **UNECE / FAO**

Disciplines include

Social science

Landscape Architecture

Economics

Climatology

Geography

Natural science

Ecology

Forestry

Biology

Hydrology

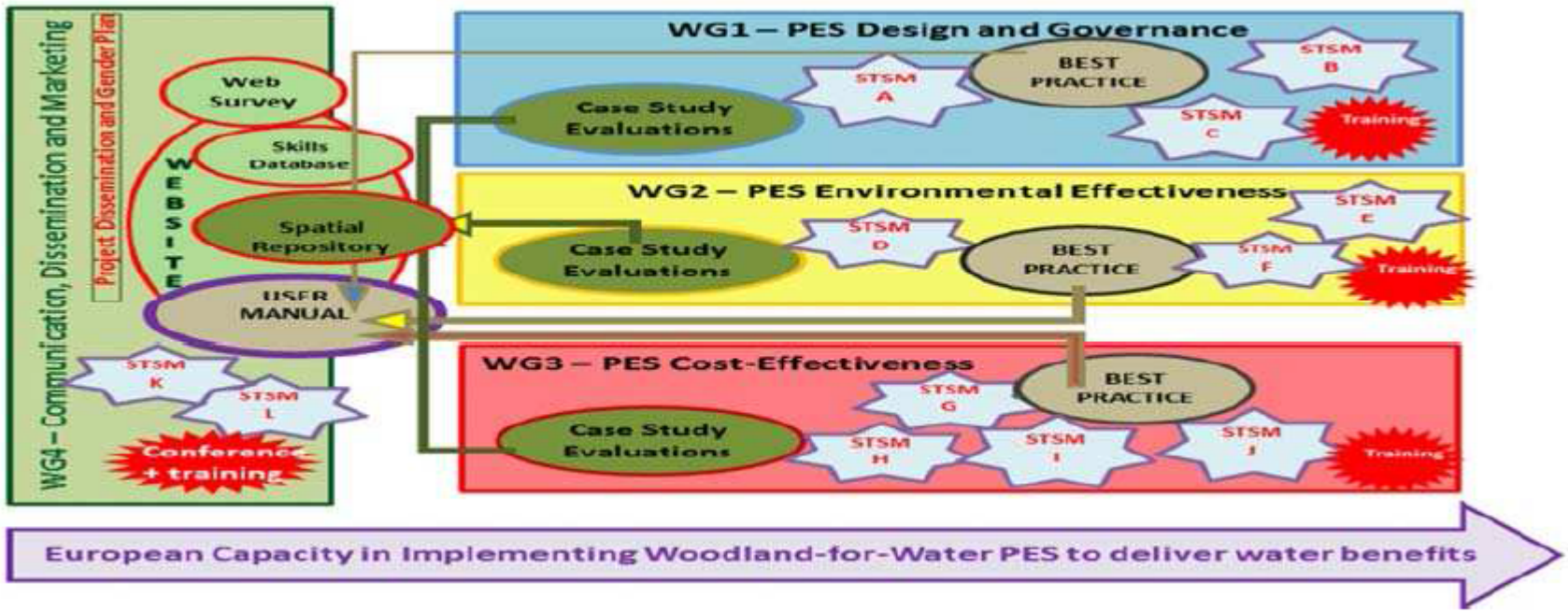
Biochemistry

Geochemistry

Agriculture

Engineering

3.1.3. PERT Chart (optional)



4 Working Groups:

- **Design and Governance (WG1)**
- **Environmental Effectiveness (WG2)**
- **Cost-Effectiveness (WG3)**
- **Communication, Dissemination & Marketing (WG4)**

1) Planning activities to achieve goals

Period 1 (Nov 2016 – April 2017) goals:

- **GAPG1:** Define a **Dissemination & Exploitation Plan**
- **GAPG2:** Create …**Spatial hub**

Period 2 (May 2017 – April 2018) goals:

- **GAPG1:** Explore potential **investors' perceptions** of what would be needed to attract them to purchase credits
- **GAPG2:** Populate and publish **preliminary look-up tables** on the effectiveness of woodland measures to reduce
- agricultural diffuse pollution
- **GAPG3:** Write a thought leadership article on **assessing the cost-effectiveness of woodlands for water PES**
- **GAPG4:** Launch an **online web survey** to gather information
- on woodlands for water PES schemes
- **GAPG5:** Maintain and add to the website and **spatial hub**

Please take WG minutes or list Action points

Case Studies: WGs

1) What questions would we like included in the online survey of woodlands for water PES?

2) What information would be most useful to include in developing the spatial hub?

3) What questions should we ask during the visit tomorrow to provide information needed for this case study?

4) Vision: What would you like the COST Action to achieve?

Deliverables & Timelines

MoU envisages for WG1:

- **3 STSMs (+ associated reports)**
- **1 training school**
- **Chapter for User Manual**

Table 1: WG1 tasks, milestones and deliverables		
Task	Month	
T1.1	1-27	Characterise design and governance aspects of European W-for-W PES.
T1.2	22-36	Identify Best Practice in PES design and governance, using Case Studies.
T1.3	31-48	Training and guidance for 'Design and Governance' chapter of *'User Manual'*.
Milestones		
M1.1	15	STSM (A), exploring potential investors' perceptions of what would be needed to attract them to purchase credits, and interest in providing finance.
M1.2	24	STSM (B), exploring motivations and barriers of other potential PES participants (e.g. farmers, water utilities, landowners and the general public).
M1.3	33	STSM (C), engaging with policy-makers on best governance of new schemes + explore potential for citizen science to monitor completed PES schemes.
M1.4	39	Training School *'PES design and governance'*, including participatory approaches to stakeholder interaction at river basin level.
Deliverables		
D1.1	18	Report on investors' perceptions
D1.2	28	Report on motivations of potential PES participants and barriers.
D1.3	36	Report on governance and engaging with policy-makers.
D1.4	39	'Design and Governance' chapter for *'User Manual'*

Deliverables & Timelines

MoU envisages for WG2:

- **3 STSMs**
- **2 training schools**
- **2 workshops**
- **Look-up tables**
- **1 journal article**
- **Chapter for User Manual**
- **Newsletters & trade articles**

Task	Month	
T2.1	1-9	**Review evidence** on the effectiveness of woodland creation measures for reducing a range of agricultural diffuse pollutants.
T2.2	7-12	Agree a value range for the effectiveness of woodland creation measures to reduce different diffuse pollutants for use in pollutant and ES models.
T2.3	7-24	**Populate look-up tables:** evaluate how well existing pollutant and ES models quantify woodland creation impacts on diffuse water pollution. Assess models' ability to account for other W-for-W benefits (e.g. flood risk, water temperature), possible disbenefits (e.g. water yield) & linked services (e.g. carbon sequestration). Evaluate mapping tools; write methodologies; and provide guidance on data, models and mapping tools, as a Chapter for '*User Manual*'.
T2.4	19-48	**Training and guidance** on designing and managing woodland measures to enhance their effectiveness at pollutant removal; chapter for '*User Manual*'.
Milestones		
M2.1	9	**STSM (D)**, to review the effectiveness of woodland creation measures in reducing a range of agricultural diffuse pollutants and design a standard set of measures.
M2.2	12	**1st Workshop**, to discuss and agree value ranges for the ability of woodland measures to reduce individual diffuse pollutants; and populate look-up tables.
M2.3	15	**STSM (E)**, completing review of pollutant and ES models' suitability to quantify impacts of woodland measures on diffuse pollution at a range of scales.
M2.4	21	**2nd Training School**, on applying and comparing usefulness of preferred models to assess impacts of woodland measures on losses of agricultural diffuse pollutants to water in selected Case Study sites.
M2.5	24	**STSM (F)** completes methodology for assessing the effectiveness of woodland creation measures to reduce agricultural diffuse pollution, and provides guidance on the strengths and weaknesses of data, models and mapping tools.
M2.6	36	**2nd Workshop**, to write guidance on the design and management of woodland measures to maintain/enhance pollutant removal effectiveness at minimum risk.
Deliverables		
2.1	15	**Publish look-up tables** on the effectiveness of woodland measures in reducing agricultural diffuse pollution.
2.2	24	**Report:** *'The suitability of pollutant and ecosystem service models to quantify woodland creation impacts on diffuse pollutant losses to water, to account for other woodland water benefits and potential disbenefits, and services such as carbon sequestration, across a range of scales.'* (Chapter of '*User Manual*').
2.3	30	**Methodology, with Case Study worked examples**, to assess the effectiveness of woodland creation measures for reducing agricultural diffuse pollution.
2.4	36	**Journal paper:** '*The effectiveness of woodland creation measures for reducing agricultural diffuse pollutants*'.
2.5	39	**Practical guidance** on designing/managing woodland measures to optimise their effectiveness at pollutant removal, for Chapter for '*User Manual*'.
2.6	18-48	**Newsletters & trade articles** on using targeted woodland creation to tackle agricultural diffuse pollution as part of integrated catchment management.

Deliverables & Timelines

MoU envisages for WG3:

- **4 STSMs & associated reports**
- **1 training school**
- **1 thought leadership article**
- **1 journal paper**
- **Chapter for User Manual**
- **Newsletters & trade articles**

Table 3: WG3 tasks, milestones and deliverables		
Task	Month	
T3.1	1-12	Agree **common protocols**; to estimate the cost-effectiveness of W-for-W PES (by month 6) and for socioeconomic evaluation (by month 12).
T3.2	13-27	**Evaluate demand-side (buyer) motivations**.
T3.3	16-30	Evaluate impact of applying climate change scenarios on PES cost-effectiveness.
T3.4	31-48	**Training and guidance** on Best Practice for socioeconomic evaluation and cost-effectiveness analysis of W-for-W PES; chapter for '*User Manual*'.
Milestones		
M3.1	24	**STSMs (G&H) on demand-side (buyer) motivations** of W-for-W PES.
M3.2	27	**STSMs (I&J) on demand-side and climate change investigations into PES cost-effectiveness** completed.
M3.3	33	3rd **Training School** on Best Practice (socioeconomic evaluation and cost-effectiveness analysis of W-for-W PES).
Deliverables		
D3.1	12	**'Thought leadership' article** on 'Cost-effectiveness of W-for-W PES'.
D3.2	24;27;33	**Reports on** demand-side and climate change STSM results.
D3.3	27-48	**Journal paper, newsletters & trade articles** on socioeconomic evaluation and cost-effectiveness analysis of W-for-W PES.
D3.4	39	**Guidance** on Best Practice for socioeconomic evaluation and cost-effectiveness analysis of W-for-W PES for a chapter of the '*User Manual*'.

Deliverables & Timelines

MoU envisages for WG4:

- 2 STSMs (+ associated report)
- 1 online survey
- factsheets
- Website, spatial hub & skills database
- Synthesis chapter & User Manual
- Use of Social Media + Other KE activities
- Final conference proceedings & Project report

Table 4: WG4 tasks, milestones and deliverables		
Task	Month	
T4.1	1-3	Agree **Dissemination and Exploitation Plan** (M2).
T4.2	1-48	Design, create, promote, extend and maintain the **PESFOR-W web hub**.
T4.3	1-15	Expand the network of countries involved in assisting collection of information on existing PES pilots, projects and best practice.
T4.4	1-9	Conduct EU **online web survey** to gather information/opinions on W-for-W PES.
T4.5	10-45	**Collect key details, including financial and socioeconomic information for W-for-W PES fact sheets for existing and new Case Studies**.
T4.6	24-48	Synthesise and edit Best Practice in the '***User Manual: Smarter Guidance on Woodlands-for-Water PES***'; translated into 6 European languages.
T4.7	24-48	Organise/deliver **Final Conference** (Month 45) by Conference Committee.
Milestones		
M4.1	6	**Spatial hub** operational.
M4.2	10	Launch **online web survey**.
M4.3	21	**STSM (k)** collecting key data, including financial and socioeconomic information, on W-for-W PES schemes for Case Study fact sheets.
M4.4	27	**Existing Case Studies are all on Spatial Repository** on PESFOR-W website.
M4.5	28	Establish skills database on 'European **PES Expertise**'.
M4.6	29	**STSM(l)** on best marketing and communication practices for PES.
M4.7	45	**Final Conference** takes place.
M4.8	45	**4th Training School,** on applying the User Manual.
Deliverables		
D4.1	6	PESFOR-W **website**.
D4.2	27	Publication of **factsheets on existing Case Studies** on W-for-W PES.
D4.3	33	Report on '***Communicating the PES "Wow factor"***' (- '*User Manual*' Chapter).
D4.4	39	**Publication of Final Case Study synthesis** chapter for '*User Manual*'.
D4.5	42	Publish '***User Manual: Smarter guidance on W-for-W PES schemes***'
D4.6	1-48	Other **knowledge exchange** activities (e.g. via social media and press).
D4.7	48	**Final Conference** published proceedings and Final Project Report.

e.g. PROGRESS REPORT AT MONTH 24

MoU objective	Achieved Yes / Partially / No	Evidence of (partial) achievement including hyperlink to enable assessment of the achievement. Justification if full achievement is not foreseen
Copy from e-COST or MoU		For each objective insert evidence of (partial) achievement including hyperlink to enable assessment (by the Action Rapporteur) of the achievement and access by end users
Copy from e-COST or MoU		
Copy from e-COST or MoU		
Copy from e-COST or MoU		

MoU deliverable	Level of progress[1]	Evidence of (partial) delive including hyperlink to enab of the delivery[1]. Justificatio achievement is not foresee
Copy from e-COST or MoU		
Copy from e-COST or MoU		

- **Co-authored publications & H2020 proposals**
- **Additional outputs & achievements**

general Questions

1) Where would you like the 2019 & 2020 meetings of the Action to be held & which woodlands for water PES schemes would you like to visit as case studies?

- 2 meetings in GP4 (May 2019-April 2020)
  - E.g. June 2019; September/October 2019
- 1 meeting in GP5 (May - October 2020)

1) What would you like the Legacy of PESFOR-W to be?

PESFOR-W

Payments for Forests and Water

i) Please sign the attendance list each day

(a requirement for reimbursement of your expenses – and the basis for paying local organiser support)

ii) Please submit any claim for reimbursement of expenses on eCOST asap after you return home - by Wednesday 15th November 2017 at the latest (allowing time for Core Group decisions on any GP2 budget adjustments on 17th November)

- **let Claire Holmes** (claire.holmes@forestry.gov.uk) **know in advance if unable to meet this deadline**

PESFOR-W flyers available

iii) Please take copies of the PESFOR-W flyer back with you to distribute at other events

cost
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copyright Forestry Commission

Objectives:

- Characterize & evaluate governance models
- Evaluate environmental effectiveness of targeted woodland planting
- Explore cost-effectiveness of woodland planting for reducing diffuse pollution
- Create an European PES repository of case studies
- Develop User Guidance on suitability of pollutant, ecosystem service & catchment scale models to quantify the effectiveness of tree planting to reduce diffuse pollution

Funded by the Horizon 2020 Framework programme of the European Union

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EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

COST Action CA15206

PESFOR-W

Payments for Ecosystem Services_Forests for Water

RESEARCH NETWORK

PESFOR-W COST Action (CA15206):
(2016-2020) covering ≈40 countries

Chair: Gregory Valatin, Forest Research,
gregory.valatin@forestry.gov.uk

Home page: https://www.forestry.gov.uk/fr/pesforw

Funded by the Horizon 2020 Framework programme of the European Union