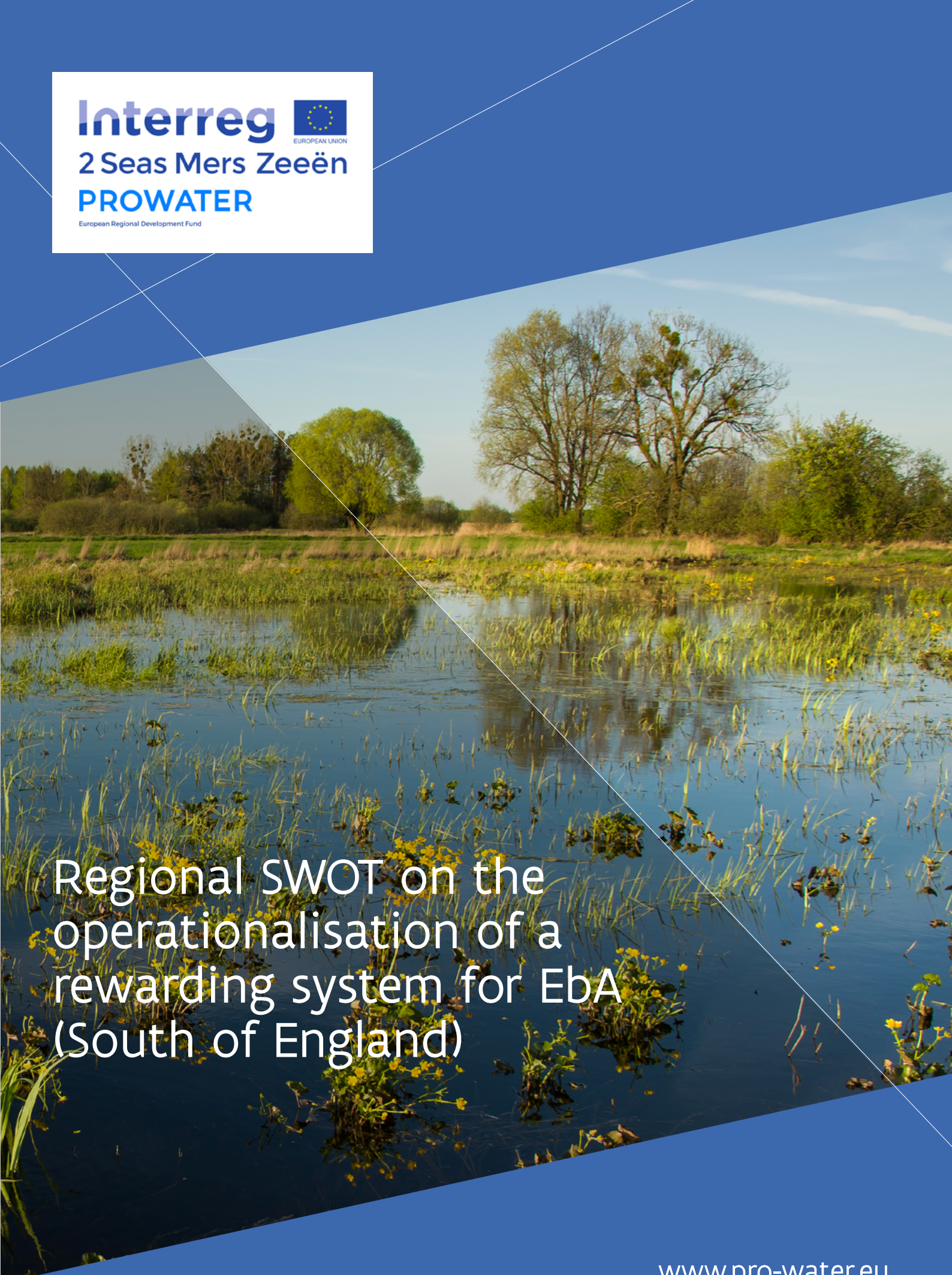
Interreg
EUROPEAN UNION
2 Seas Mers Zeeën
PROWATER
European Regional Development Fund



# Regional SWOT on the operationalisation of a rewarding system for EbA (South of England)

www.pro-water.eu

## DISCLAIMER

The authors assume no responsibility or liability for any errors or omissions in the content of this report. The information contained in this report is provided on an "as is" basis with no guarantees of completeness, accuracy, usefulness or timeliness.

The sole responsibility for the content of this deliverable lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the Interreg 2 Seas Programme nor the European Commission are responsible for any use that may be made of the information contained therein.

## COLOFON

The PROWATER project has received funding from the Interreg 2 Seas programme 2014-2020 co-funded by the European Regional Development Fund under subsidy contract No 2S04-027. Interreg 2 seas is a European territorial cooperation program for the United Kingdom, France, the Netherlands and Belgium (Flanders).

Citation: K. Bauer and J. Neville (2019). Regional SWOT on the operationalisation of a rewarding system for EbA (South of England). Interreg 2 Seas programme 2014-2020 No 2S04-027. South of England, South East Rivers Trust & Westcountry Rivers Trust

### AUTHORS

K. Bauer
c/o Environmental Sustainability
South East Rivers Trust
London Borough of Sutton
24 Denmark Road
Carshalton SM5 2JG
United Kingdom

J. Neville
Senior ecologist
Westcountry Rivers Trust
Rain Charm House, Kyl Cober Parc
Stoke Climsland, Callington PL17 8PH
United Kingdom

### PARTNERS

Flanders State of the Art
Universiteit Antwerpen
Provincie Antwerpen
pidpa water in beweging
Westcountry Rivers Trust
Kent County Council kent.gov.uk
south east water
Waterschap Brabantse Delta
natuurpunt
south east rivers trust

# Executive Summary

PROWATER (Protecting and Restoring Raw Water Sources through Actions at the Landscape Scale) is an Interreg 2 Seas project running from 2018-2022 with partners from Belgium, Netherlands and France as well as Westcountry Rivers Trust, South East Rivers Trust, South East Water and Kent County Council (South England group). The overall objective of the project is to build resilience against droughts (and extreme precipitation events) through Ecosystem Based Adaptation (EbA) measures (interventions that work with natural processes). A key objective is to develop and implement a Payment for Ecosystem Services (PES) model that facilitates the implementation of EbA measures.
The supply of freshwater for human consumption is a key service provided by our natural assets that our society relies on. The quantity and quality in which this can be delivered is under pressure from increasing demand, land use change and climate change – affecting ecosystem functions such as infiltration and retention of water, which are crucial for the resilience of catchments as well as the provision of water to humans. PROWATER focuses on restoring and protecting these functions by protecting and restoring the natural capital that provide them. PES and similar market-based incentives have been identified as one instrument needed to address the degradation of our natural capital and ecosystem services in the UK Government's 25 Year Environment Plan as well as approaches championed in agricultural and water industry policies.

Work Package 1 of the project aims to develop a common strategy and action plan to implement the rewarding scheme for EbA. The work package aims to look at the EbA PES system from the perspective of buyers and brokers, focussing on the political, financial, practical and organisational perspectives. Each region will organise a series of workshops that will analyse the regional implementation of the rewarding system through a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis from a wide range of participants.

This report provides an interim assessment of the operationalisation of a rewarding system for EbA in the South of England through a SWOT framework following the initial regional workshops undertaken to date. Its main purpose is to inform partners of progress and insights generated as part of this work package and to feed into future development and evaluation of stakeholder workshops. This report and future outputs from workshops will form input to a policy guidance document on implementation of PES.

A number of workshops were held by the South England partners to initiate the SWOT process for operationalisation of a rewarding system for EbA in the region. The initial workshops aimed at considering sub-regional specific characteristics and knowledge dissemination were mainly attended by partners. The first regional stakeholder workshop followed in Tonbridge in December 2018.
In the SWOT workshop, the main aim was to understand the (real and perceived) characteristics of PES as a concept that would influence its success in the context of water resource management in the South East. This reflects the setup of the workshop with a range of practitioners and policy makers familiar with the concept of PES and focused on delivery on the ground.

Across the four sections, answers were distributed with some differences between the categories. Overall, Strengths and Weaknesses had most answers, and most of the answers given were coded as

"practical" considerations. The main strengths of and opportunities for the approach were seen to be due to alignment with existing policies and approaches as well as the ability to create a business case and incentives for innovation and partnership around its delivery. In a SWOT analysis, the Strengths and Weaknesses will tend to be 'inward' focussed, looking at the organisations and individuals that would be involved in a scheme, and the Opportunities and Threats are more outwardly focussed, looking at enabling conditions, such as policies, as well as potential competition.

The responses are considered to confirm a relatively good level of understanding of the concept of PES/EbA schemes, however the focus and language used was frequently related to farmer vs water company schemes, with little discussion around wider potential opportunities, although this is potentially driven at least partially by the mix of stakeholders represented at the workshop, with a significant number from water companies, and other organisations acting as brokers in existing water company based PES schemes. In addition, current uncertainties within the UK political and policy landscape, driven by Brexit, have led to consideration of private commercial opportunities over and above government schemes where details are currently unknown.

It is considered that the overarching themes of this initial evaluation provide a framework in which the remainder of the workshops can be developed to ensure that maximum benefit is generated to allow the development of a strategy that provides information both regionally and across the entire Interreg region. A mix of stakeholders will be required to ensure that viewpoints are captured from across the range of actors and skillsets present. Work will be needed to engage those potential actors not yet involved in the discussions. This will broaden the viewpoints and allow wider consideration including the potential for aligning streaming funds potentially not yet considered, as well as maximising the potential for multiple benefits in terms of ecosystem services and cost effectiveness. In the South of England this approach is very well aligned to meet the challenges set out in the UK Government's 25-Year Plan for the Environment, providing a policy driver for implementation.

# Contents

# 1 Introduction

## 1.1 PROWATER project

PROWATER (Protecting and Restoring Raw Water Sources through Actions at the Landscape Scale) is an Interreg 2 Seas project running from 2018-2022 with partners from Belgium, Netherlands and France as well as Westcountry Rivers Trust, South East Rivers Trust, South East Water and Kent County Council (South England group).

The overall objective of the project is to build resilience against droughts (and extreme precipitation events) through Ecosystem Based Adaptation measures (interventions that work with natural processes).

Climate and Land Use Change are increasing pressures on water resources in the south of England. Changing rainfall patterns, alongside intensification of agriculture (often resulting in increased input of fertilizers and pesticides and machinery) and urbanisation (with increased surface sealing and urban pollution) impact water quality as well as water quantity not only in the environment but also for human consumption. Increasing resilience of catchments to the combined effects of these pressures necessitates different actors to work together to address these challenges and implement ecosystem-based adaptation. One approach is through the use of rewarding mechanisms in the form of Payments for Ecosystem Services (PES) schemes, which can bring together those benefitting from adaptation measures and those delivering them through (financial) incentives that create benefit for both stakeholders.

A key objective of the project is therefore to develop and implement a PES model that facilitates the implementation of Ecosystem Based Adaptation (EbA) measures. The project will develop tools to target the implementation of EbA measures and aims to identify, quantify and demonstrate additional benefits of the EbA measures in order to recognise the full spectrum of benefits and provide additional leverage and funding for implementation.

## 1.2 Work Package 1

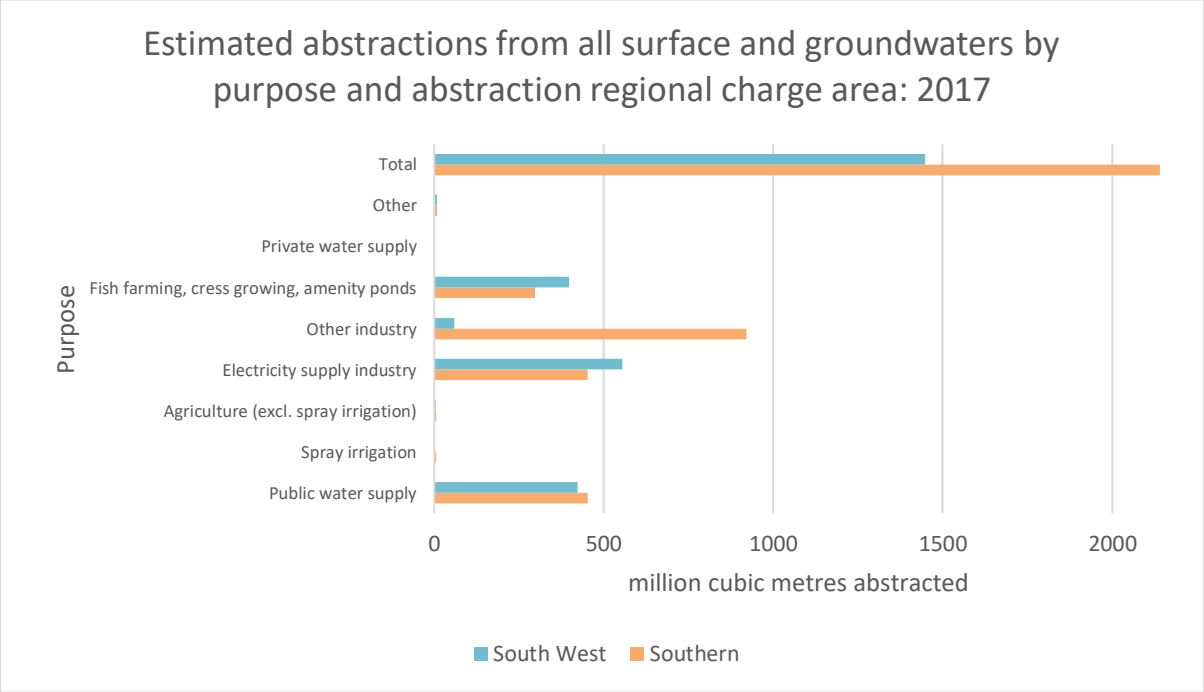
The project will be delivered through six work packages. Work Package 1 of the project aims to develop a common strategy and action plan to implement the rewarding scheme for EbA. The work package aims to look at the EbA PES system from the perspective of buyers and brokers, focussing on the political, financial, practical and organisational perspectives. Each region will organise a series of workshops that will analyse the regional implementation of the rewarding system through a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis from a wide range of participants. A SWOT analysis technique can be very effectively applied to the inform the strategic marketing of an organisation or partnership, but it can also be used as part of a natural capital approach to inform strategic targeting, design and delivery of interventions, as will be the case within the PROWATER project. An international workshop then aims to build on the regional lessons learnt to target the key challenges from an organisational point of view.

This report provides an interim assessment of the operationalisation of a rewarding system for EbA in the South of England through a SWOT framework following the initial regional workshops undertaken to date. This report will be updated once all regional workshops have been completed, which is anticipated to be towards the end of 2020.

## 1.3 Regional Context

The regional context for this report outlines both the overarching English policy and legislative frameworks for the South England region with regards to provision of water for human consumption, as well as the hydrological differences that characterise the South East and South West of the area. Both elements are set out briefly in this report, as they are investigated more fully within other areas of PROWATER, however they serve to guide the SWOT review for the region and therefore some of the more pertinent factors are discussed here.

Water is abstracted by a range of industries in both regions. An overview of estimated abstractions in 2017 for the two Environment Agency regions is given below (graph 1), showing public water supply, fish farming and electricity supply as the main industry abstractors, with "other industry" contributing a significant amount in the Southern region:




*Graph 1 (Source: Water abstraction tables for England (https://www.gov.uk/government/statistical-data-sets/env15-water-abstraction-tables))*

Some of these abstractions are returned to the environment (e.g. fish farming), others reduce availability for other water users (agriculture and water supply). Electricity supply accounts for a large part of abstraction nationally but has been declining in the Southern and South Western region since 2000.

In England water services (public water supply) are provided by the private sector. Private companies deliver both water and sewerage services. The cost of water and sewerage is met by the customers. In addition, the private companies are expected to make a profit.

Currently water companies do not have to compete for domestic customers and compete only in a limited way for commercial customers, therefore prices they charge customers are regulated by the Office of Water Services (OFWAT), which has the duty to protect customers' interests while ensuring that the privately owned water companies carry out and finance their operations properly.
The Environment Agency (EA) and Natural England (NE) protect and advise the government on the environment in England. The EA has the duty to control discharges to rivers and seas, conserve water resources, prevent pollution and promote conservation.

The Drinking Water Inspectorate (DWI) is an independent, government-appointed regulator. The DWI implements standards and maximum permissible levels for the various chemicals in drinking water and can prosecute companies that fail to meet those standards.

## 1.4 Legislation and Policy

As outlined within the Ofwat website (https://www.ofwat.gov.uk/regulated-companies/ofwat-industry-overview/legislation/) the water and sewerage sectors in England and Wales have to comply with several different Acts of Parliament and European Directives.

Numerous policies and plans are also in place to regulate the water sector. Three of the most recent that are particularly relevant to PROWATER comprise:

- The 'Water Abstraction Plan Policy' (December 2017) sets out how the Government will reform water abstraction management over the coming years and how this will protect the environment and improve access to water. The plan includes three main elements:
    - Using existing regulatory powers and approaches to address unsustainable abstraction
    - Developing a stronger catchment focus and local solutions
    - Supporting these reforms by modernising the abstraction service.
- The Government's 25 Year Environment Plan sets out government actions with regard to reforming the approach to water abstraction. These include:
    - Making sure that water companies take a leading role in addressing unsustainable abstraction as part of the Water Industry National Environment Programme (WINEP);
    - Regulating all significant abstractions (e.g. agricultural, other industry) that have been historically exempt to make sure that they also play a part in protecting the water environment by 2022; and
    - Updating ten abstraction licensing strategies by 2021 and all remaining strategies by 2027 to capture agreed solutions to environmental pressures in catchments.
- The Agriculture Bill (2017-2019) is currently in the progress of going through parliament and sets out plans to replace the current subsidy system, which is seen as ineffective. This will include:

- Farmers being paid for the delivery of “public goods” including biodiversity and soil health;
- Delivery of a new Environmental Land Management system with trials beginning next year;
- Increasing transparency in the supply chain.

In addition to the water sector legislation and policy, there is a huge range of other legislation and policies relevant to an EbA rewarding system, primarily relating to land management, including forestry, agriculture, biodiversity and planning (both rural and urban). Current planning around likely future legislation and policy in England is heavily influenced by the on-going uncertainty over Brexit. This is likely to lead to significant changes in elements of policy, particularly relating to the agriculture sector, but details are only beginning to emerge and are unlikely to crystallise in the immediate future. The implications of Brexit on UK policies influenced by various EU Directives are unknown but it is likely that there is a need to comply for the foreseeable future. The details of the above will be discussed as part of the report on risks and challenges for water supply, which will be presented as one of the outputs for Work Package 3. In the meantime, this uncertainty creates both opportunities and threats for an EbA rewarding system, and this has been ever present in SWOT workshop discussions, as outlined later in this report. Local policies with opportunities to influence these or relevant to the project are listed in the policy mapping exercise undertaken as part of the workshop.

## 1.5 Water Resource Challenges

Overarching water resource challenges in the South of England largely mirror those across the Interreg area, driven by the combined impacts of population growth and land use change against the backdrop of climate change.

**Population growth:** The Office for National Statistics (ONS) estimates population growth for England and Wales of between 6 and 16 million by 2040 and between 12 and 32 million by 2065. Much of this increase is likely to be concentrated in the south east which is already one of the most water-stressed parts of the country, with the UK population projected to reach over 74 million by 2039.

**Land Use:** Historic and current land use impacts water quality and availability, with nutrient and pesticide inputs demanding often expensive treatment. Diffuse pollution from agriculture impacts water bodies in both regions. Rising nitrate levels in groundwater (above drinking water standards) have been due to historic and current land management practices, and some new pesticides, such as metaldehyde (which has recently been banned from outdoor use), cannot be removed at treatment works and can mean that a source is temporarily unavailable.

**Public water supply:** Currently the average person in the UK uses in the region of 150 litres of water a day (Ofwat, 2019). Although future forecasts are uncertain many point to an increasing trend. An increasing number of smaller households is likely, which leads to rises in personal water consumption, and the overall demand for water is likely to grow. Historically, however, there has been a general trend in reducing demand in spite of increases in population, as a result of considerable reductions in industrial use, and a general reduction in per capita consumption through more efficient appliances

and increased metering of properties as well as reductions in leakage. South West Water's latest Water Resources Management Plan (2018) outlines that they expect the population to grow by approximately 0.4 million over the next 25 years; however they expect demand to be relatively steady due to expected water savings and leakage reductions. This picture is not reflected within the South East, however, where the majority of population growth is expected and water consumption is likely to grow. It is expected that by 2100, the region will face water deficits between 960Ml/d – 2000 Ml/d (WRSE, 2019).

**Climate change and drought:** Key findings from the UK Climate Impacts Programme and other studies suggest that all areas of the UK will get warmer, with a likely change in precipitation pattern to wetter winters and drier summers. The magnitude of this change is, however, uncertain. The key findings from the Environment Agency's 2018 'State of the Environment: Water Resources' (EA, 2018) report are that:

Impacts of pressures on water resources are evident and will increase with a growing population, changing climate and changes to how we use land.

- Abstraction, drainage and altered water levels are major causes of damage to wetlands.
- In 2017, abstraction from around 28% of groundwater bodies and up to 18% of surface waters was at higher than sustainable levels.
- In 2016, unsustainable abstraction prevented at least 6% and possibly up to 15% of river water bodies from meeting good ecological status or potential.
- Winter rainfall has increased since the mid-18th century; summer rainfall has decreased slightly over the same period.
- High winter river flows have increased over the past 30 years, with a subsequent increase in the frequency and magnitude of flooding.
- There is no clear trend in droughts, but summer river flows and groundwater levels may decrease in the future.

Whether the level of abstraction reduction expected can be balanced with the combined pressures of increased demand and climate change is central to the future planning and the investment decisions society must take, and should set the scene for the importance of PROWATER and the opportunities it can provide against current urgent challenges facing the water sector.

## 1.6 Geographical and Hydrological Context

There is significant difference between the hydrological context of water resources between South East and South West England (see Figure 1). For the South West of England 90% of the supply comes from surface water sources, such as reservoirs and river intakes. South West Water operates numerous local reservoirs, supported by three large strategic reservoirs: Colliford, Roadford and Wimbleball. The other 10% of the supply comes from groundwater sources such as springs, wells and boreholes which are mainly located in East Devon. In contrast large areas of the South East are underlain by chalk, leading to a reliance on groundwater aquifers for a large proportion of the water resources. These differences will impact the opportunities and types of investment likely to give the most impact.

South East England is one of the nine official regions of England and comprises the counties of Kent, East Sussex, West Sussex, Hampshire, Isle of Wight, Surrey, Berkshire, Buckinghamshire and Oxfordshire (with the last 3 not forming part of the 2 Seas area). It is the third largest region of England and the most populated one, with a population of over 9 million in 2017 (14% of the UK population in 2017) (NOMIS, 2017) and high predicted population growth (20% by 2044 compared to 2019).
Arable agriculture, pastures, horticulture as well as woodland makes up the highest proportion of land use, with a wide range of habitats and a high proportion of protected sites (including two National Parks and 6 Areas of Outstanding Natural Beauty). Although average income of the South East is higher than the UK average, the Index of Multiple Deprivation also shows some of the most deprived areas of the UK in the region.

The South East is one of the driest, sunniest regions in England, with annual rainfall ranging from 550mm (Thames Estuary) to 950mm (South Downs) on average across the region. Most of the region's drinking water supply (85%) comes from groundwater sources held in chalk and sandstone aquifers. These groundwater bodies often support globally rare chalk streams, but are already often over-abstracted. With an increase in population growth and a change in rainfall patterns, higher temperatures and more extreme weather events, stress on water resources is predicted to increase. It is expected that by 2100, the region will face water deficits between 960Ml/d – 2000 Ml/d (WRSE, 2019). South East Water's long-term aim is to reduce per capita consumption to 115 litres per day by 2050 to reduce demand.

In contrast South West England is the largest region of England (approximately 24,000km$^2$), but with a relatively low population density, with a population in the region of 5 million. Land uses are dominated by agriculture, primarily pasture, with areas of protected habitats including two National Parks (Dartmoor and Exmoor) and coastal habitats. The region sees a significant influx of summer tourism which puts pressure on resources, however the region has one of the highest annual rainfall levels across England. South West Water's latest Water Resources Management Plan (2018) outlines that the most likely scenario indicates no expected shortfall between supply and demand over the next 25 years; however predicted climate change forecasts will lead to increasing likelihood of extreme weather events and stress on water resources in the area.

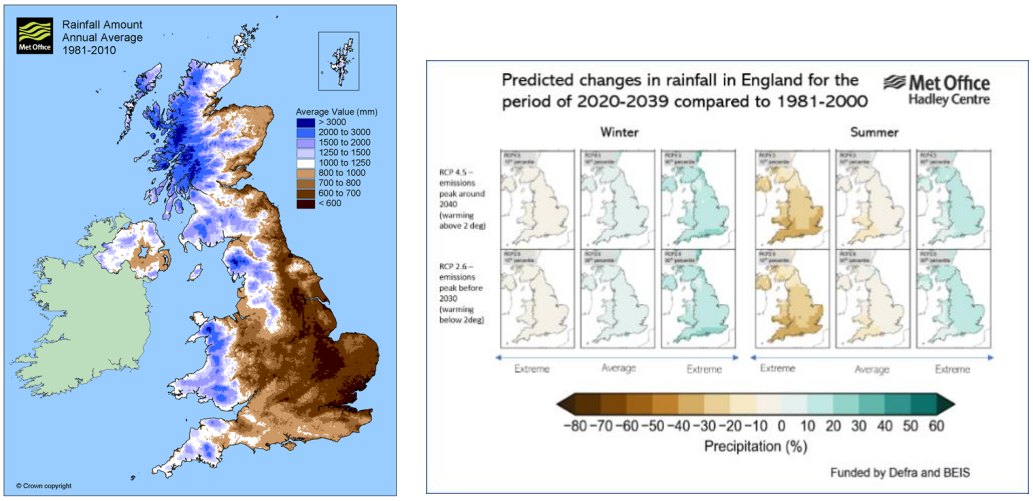



*Figure 1: Annual Average Rainfall across the UK (based on period 1981-2010). Source: MetOffice UK*

# 2 Methodology

A number of workshops were held by the South England partners to initiate the SWOT process for operationalisation of a rewarding system for EbA in the region. The initial workshops aimed at considering sub-regional specific characteristics and knowledge dissemination were mainly attended by partners. The first regional stakeholder workshop followed in Tonbridge in December 2018.

To facilitate the analysis of the outputs from sessions and discussions in the workshops, they were grouped by theme as set out within the list of challenges presented within the PROWATER project plan for Work Package 1:

- Ethical
- Political
- Organisational
- Practical

The results of the analysis will sit in context with works undertaken as part of the wider work package, such as reading, conferences and meetings. It is anticipated that future workshops within Work Package 1 will be led by and build on the initial lessons and findings highlighted by these SWOT workshops. In addition, the findings will link back to the SWOT process to outline the next steps in order to provide a regional action plan/strategy for the operationalisation of a rewarding system for EbA in the region.

It should be noted that this report focusses on the regional SWOT workshops; a significant body of work relating to Work Package 1 has been undertaken alongside the SWOT workshops, including policy discussions, internal and stakeholder meetings, conferences and talks. These other works will compliment and feed into the results of the SWOT workshops as these are used to facilitate further PES workshops and work, but are reported separately.

## 2.1 Outline of Workshops

In the South of England group three workshops have been undertaken. These are summarised in Table 1 below.

*Table 1. Summary of South England group SWOT workshops (February 2019)*

| Date | Participants | Overview |
|---|---|---|
| **July 2018** | Westcountry Rivers Trust senior team | An organisational SWOT to provide an overview of internal capabilities and the South West context of an EbA rewarding scheme |
| **September 2018** | PROWATER partners and observers, including South West Water and Exeter University (SIM4NEXUS team) | This workshop aimed to facilitate the transfer of knowledge and vision building from existing UK PES schemes across other project partners and regions, in order to expedite the SWOT process. The workshop comprised presentations and discussions, alongside workshop sessions |

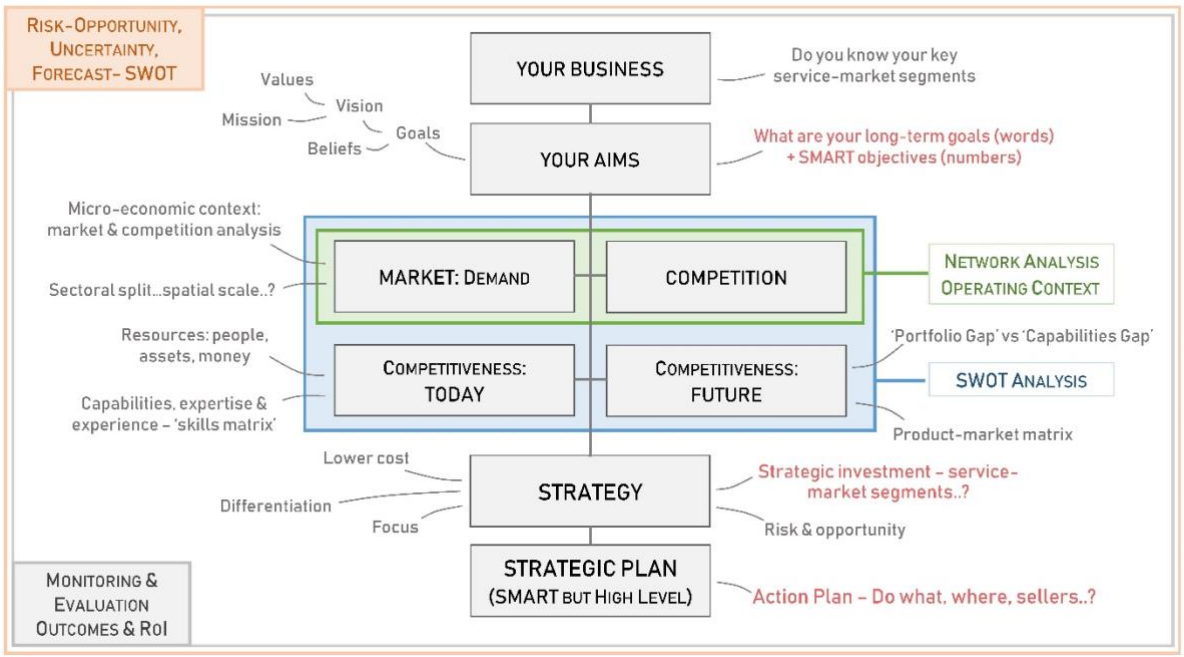
| | | |
|---|---|---|
| **December 2018** | South England PROWATER partners and observers, water companies, land management organisations and regulators | SWOT of PES in the South East including current perceptions and consideration for future design; systems map of existing networks; assessment of policy landscape (past, present and future) |

## 2.2 SWOT Process

Previous work undertaken by Westcountry Rivers Trust has highlighted the possibility that increased environmental, social, cultural and economic outcomes might be realised in the UK if environmental practitioners were able adopt a more strategic and 'business-like' approach to their collaborative working (Defra, 2017). Research revealed that a number of the innovative approaches to planning and delivering environmental works can be very well aligned with some of the key elements required to create a business strategy and a subsequent strategic (action) plan. This methodology has been incorporated into the design and delivery of the PROWATER project, to ensure a strategic approach to the development of a rewarding scheme for EbA within each region and to maximise the potential benefits of any scheme.

The schematic below sets out how a business strategy development and strategic planning process could be translated in to an environmental strategy development, planning and evaluation process.

*Schematic showing the key stages of the business strategy and strategic planning process (adapted from FT Guide to Developing a Business Strategy, 2013).*




The key elements of this process include: 1) the setting of long-term goals (and developing a vision for the future); 2) gaining a clear understanding of the economic and policy context in which you are trying to effect change and deliver your long-term goals; 3) conducting a comprehensive review of your resources (funds, people and assets), capabilities, expertise and experience at your disposal for

implementation of actions; 4) the undertaking of an environmental (market and competition analysis) and a governance/organisational SWOT analysis to determine your ability to effect change (competitiveness) both now and in the future; 5) the development of SMART objectives that you will need to achieve in order to successfully realise your long-term goals, and 6) the implementation of effective and robust monitoring and evaluation (and risk assessment) to record and report on the delivery of outputs and the realisation of outcomes through the activities undertaken.

As described above, a key element of strategy development process is the SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis. It is important to note that the SWOT analysis technique can be very effectively applied to the inform the strategic marketing of an organisation or partnership, but that it can also be used as part of a natural capital approach to inform strategic targeting, design and delivery of interventions, as will be the case within the PROWATER project.

# 3 Results

At the stakeholder workshop, 104 responses to the four SWOT sections were collected by facilitators in 4 groups and reported back to the plenary, with all being used for analysis. Responses corresponded to the categories as follows:

| **SWOT Category** | *S* | *W* | *O* | *T* |
|---|---|---|---|---|
| **# responses** | 42 | 45 | 32 | 29 |

## 3.1 Coding

The coding of responses was undertaken separately for each of the four stated categories (organisational, practical, political, ethical). Responses collected constitute a first set of "codes" determined by the group or facilitator of each group, which were then grouped into 4 categories. A final coding system was developed based on the responses within each category and through reference of relevant literature (Table 2). Responses could be repeated in multiple categories, leading to overall 166 coded items (Appendix 1).

- 'Practical': details of how a scheme would function or how implementation could be undertaken. Examples *are "Change of staff, councillors, politicians, sec of state"* or *"Farmers may see PES as a financial replacement for agricultural payments".*
- 'Organisational': internal functioning of an organisation or its structures in relation to taking part in a PES scheme or functioning in current systems, such as *"Lack of uptake by farmers due to complexities"* or *"Consistency – complex multi stakeholder issues"*.
- 'Political': either directly referring to political processes (e.g. "*Ties in well with govt's greening policy*") or with bearing on stakeholder influences and decision making ("*Big agribusinesses in SE want larger investment to make a change*").
- 'Ethical': relating to social values, justice or similar concepts. Examples are "*PES gives climate adaptation a more local focus and makes it an issue that can be tackled*" or "*Drives behaviour change and increases awareness to positive benefits*".

Both categories often overlap significantly with other areas and are rarely (especially ethical aspects) expressed directly. This is likely due to two factors: an audience mostly familiar with and positive towards the PES concept, and the focus naturally gravitated towards the more practical aspects of delivery and political climate than ethical considerations. These have been part of the discourse around the mainstreaming of the natural capital concept in the UK for a long time.

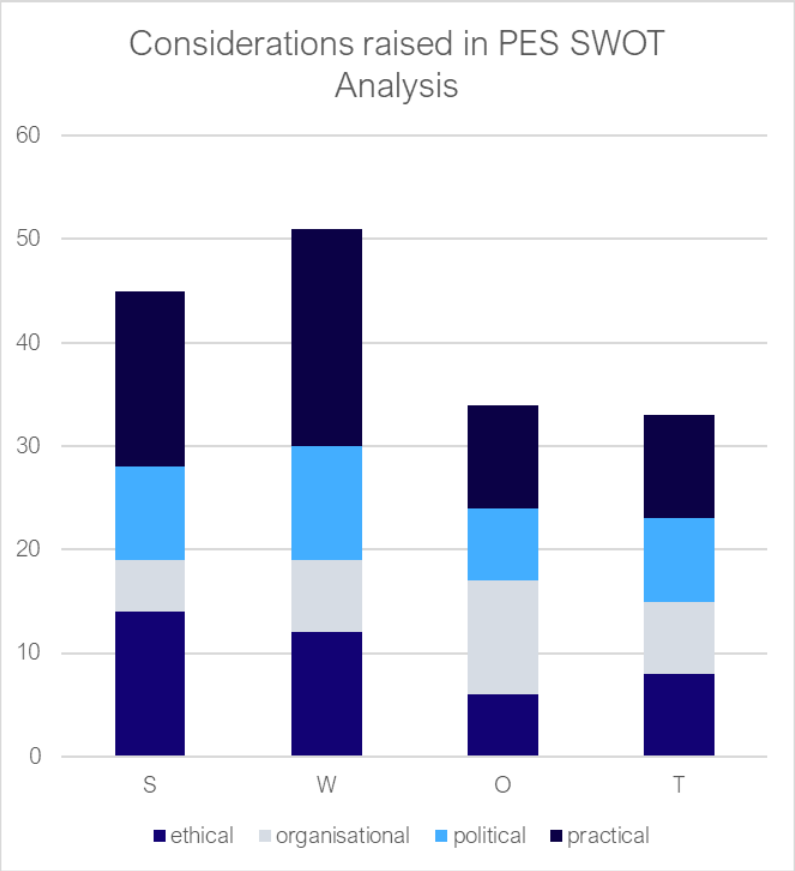
| | **Categories (pre-existing)** *(numbers in brackets represent numbers of responses in category/code)* | | | |
|---|---|---|---|---|
| | ***Ethical (40)*** | ***Practical (58)*** | ***Political (35)*** | ***Organisational (30)*** |
| **Codes (from data)** | Accepted rules (9) | Actor constellations (4) | Alignment with existing systems and policies (11) | Partnerships and progress (11) |
| | Distribution of benefits (11) | Existing systems (7) | Alignment with social norms and values (4) | Organisational structures (10) |
| | Equity implications (5) | Market criteria (2) | Dependence on political process (7) | Requirements of actors (7) |
| | Intrinsic value (1) | Evidence (7) | Influence (5) | Skillset required (2) |
| | Socio-cultural impact (14) | Complexity (4) | Market environmentalism (2) | |
| | | Business case (5) | Motivation (6) | |
| | | New opportunities (12) | | |
| | | Background conditions (8) | | |
| | | Conditionality (6) | | |
| | | Skillset (3) | | |

*Table 2: Overview of codes in given category*

## 3.2 Distribution of codes and categories

Each category (organisational, ethical etc.) was analysed for codes and themes emerging from them within the context of the SWOT analysis by grouping the codes according to the SWOT section they were placed in within the category. A graphic representation of the result of this analysis is given in graph 2 and 3 and discussed in the next section of the report.

Across the four sections, answers were distributed with some differences between the categories. “Strengths” comprised more responses around ethics (approximately a third) and less organisational than any other section. “Opportunities” had the biggest proportion or responses relevant to the “organisational” category, while “Threats” had the highest proportion of responses categorised as “political”.

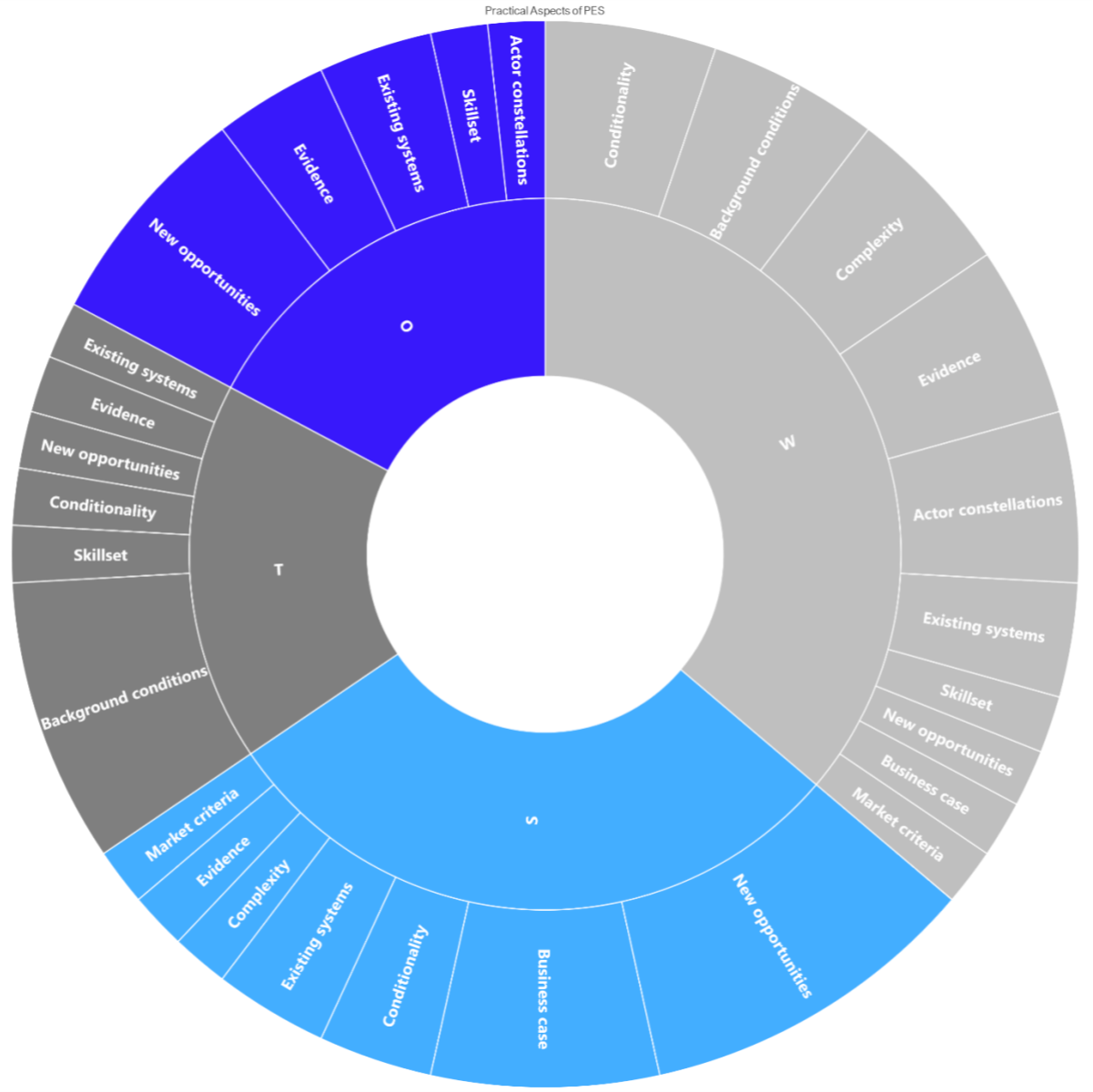



*Graph 2: Total number of responses per category in SWOT sections*

Overall, Strengths and Weaknesses had most answers, and most of the answers given were categorised as “practical” considerations.

Graph 3 below shows the results of the coding of responses to the SWOT analysis by category. Strengths and opportunities are presented in light and dark blue, weaknesses and threats in light and dark grey.

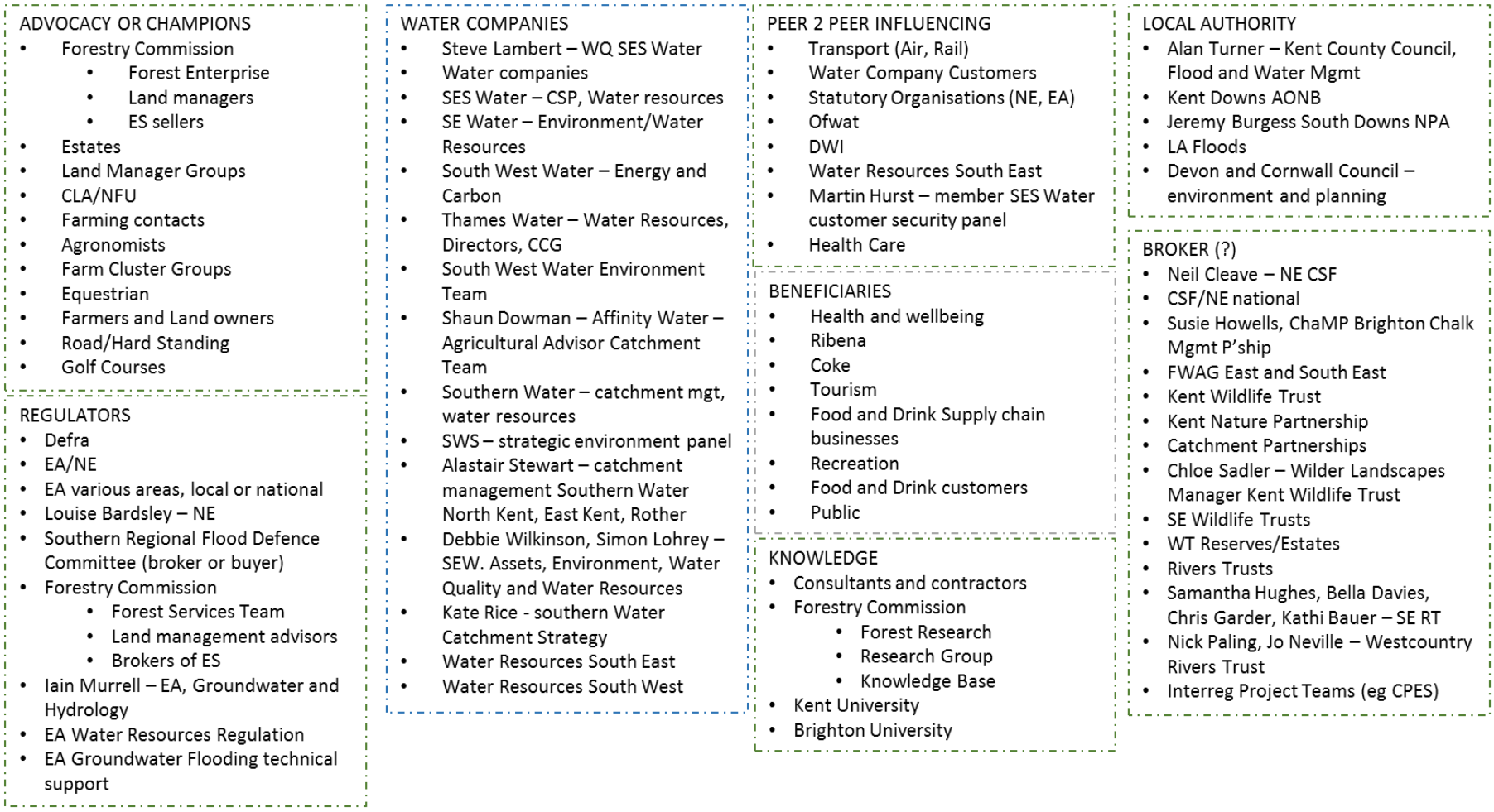

Ethical Aspects of PES
Socio-cultural impact
Distribution of benefits
Equity
Intrinsic Value
Acceptance of rules
S
Socio-cultural impact
Acceptance of rules
Distribution of benefits
Equity
W
Acceptance of rules
Equity
Distribution of benefits
T
Distribution of benefits
Socio-cultural impact
O


Practical Aspects of PES
O
W
T
S
Actor constellations
Skillset
Existing systems
Evidence
New opportunities
Conditionality
Background conditions
Complexity
Evidence
Actor constellations
Existing systems
Skillset
New opportunities
Business case
Market criteria
Existing systems
Evidence
New opportunities
Conditionality
Skillset
Background conditions
Market criteria
Evidence
Complexity
Existing systems
Conditionality
Business case
New opportunities

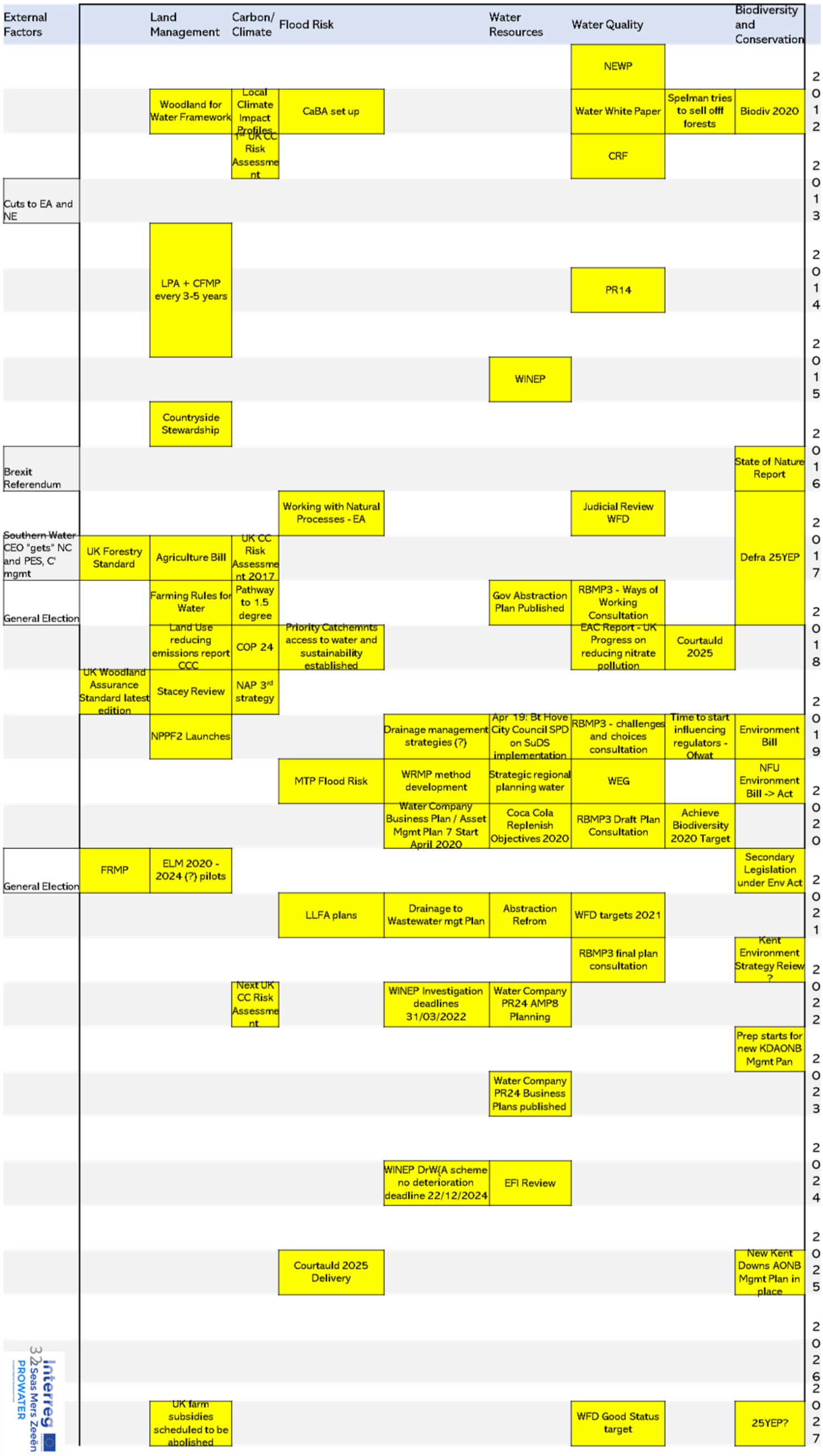

Organisational Aspects of PES
Requirements of actors
Facilitating partnerships
S
Facilitating partnerships
O
Organisational structures
Requirements of actors
W
Organisational structures
Requirements of actors
skillset required
Facilitating partnerships
T
Organisational structures


Political Aspects of PES
W
alignment with existing systems and policies
Influence
dependence on political process
alignment with social norms and values
Motivation for engagement
S
alignment with existing systems and policies
market environmentalism - neoliberalisation of nature
alignment with social norms and values
Influence
dependence on political process
T
dependence on political process
Motivation for engagement
Influence
alignment with existing systems and policies
O
Motivation for engagement
alignment with existing systems and policies
dependence on political process

## 3.3 Systems Map



## 3.4 Policy Mapping Exercise



# 4 Conclusions and Key Findings

The first two workshops were primarily utilised as a knowledge transfer and to provide a platform for the wider project-based SWOT analysis. The workshop in Exeter in September 2018 highlighted the range of schemes that are operating in a 'PES-like' fashion in the South of England, and the variety of funding mechanisms in use. A number of the project partners commented that before the workshop they thought that they had very limited exposure to any PES schemes, but that case studies provided in the workshop aligned closely with some existing and proposed projects in their regions. This is aligned with a key finding of Defra's Payments for Ecosystem Services Pilot Projects (2012-15) which concluded that *'PES is a flexible concept which is best situated within a wider context of finding enterprising ways to generate new income streams for investment in ecosystems*.'

Key elements discussed within the Exeter partner workshop include:

- Enforcement is currently primarily reactive, once damage has already happened, and not proactively checking compliance. PES could be an opportunity to proactively prevent pollution and generate improvement. Securitisation of those improvements and provision of benefits is the challenge. PES can operate across regulation, provide win-win situations and private benefits. Integrated brokers need to be able to move in those areas and integrate funding sources. Regulation is still crucial to identify relevant baselines.
- Water company customers need to agree to spend increased amount on resilience and catchment management. While in the UK they cannot currently 'vote with their feet', reputational and even financial risks (e.g. implications for credit ratings) are factors for the water companies.
- Internal water monitoring is being built up by water companies in SE England to allow targeting risks to catchments and to set up baselines. Delivery of "clean and plentiful water" as a target within the government's 25-year Environment Plan (2018) is explained in public-facing reports, but frameworks are still being developed.
- If raw water yields from different habitats can be quantified a case for investment can be made for the restoration or protection of habitats.
- PES is an opportunity to think around wider issues and design solutions at a catchment scale rather than taking a single pressure out. Systems diagrams are more important at this step than geographically accurate maps, to understand and demonstrate the flow paths of ecosystem service provision and where changes can be made.
- There are lots of opportunities already identified, from sustainable maize management to establishment of cover crops. Engagement with farmers is ongoing and ranges from trial schemes to catchment-wide payments, with some schemes paying for outcomes rather than inputs. Key lessons learned have been the importance of trust between actors and understanding the existing partnerships.

## 4.1 South East Workshop

In the following discussion, the results of this analysis are discussed and linked to wider considerations of the four analysis areas (ethical, practical, political, organisational) in the Ecosystem Services and Natural Capital discourse.

## 4.2 SWOT

Payments for Ecosystem Services have been championed by the UK government for many years, with a best practice guide (featuring Westcountry Rivers Trust's Angling Passport and Upstream Thinking project) published by Defra in 2013. The concept of Ecosystem Services is therefore not entirely new, although different groups of actors will have been engaged on different levels over the past years. A key finding of the UK National Ecosystem Assessment (UNEP-WCMC, 2011) outlined that '*A move to sustainable development will require a mixture of regulations, technology, financial investment and education, as well as changes in individual and societal behaviour and adoption of a more integrated, rather than conventionally sectoral, approach to ecosystem management.'* PES schemes are also highlighted as potential natural capital investment solutions within the government's 25-year Environment Plan (2018); however, practical experiences with schemes is still limited.

In the SWOT workshop, the main aim was to understand the (real and perceived) characteristics of PES as a concept that would influence its success in the context of water resource management in the South East. This reflects the setup of the workshop with a range of practitioners and policy makers familiar with the concept of PES and focused on delivery on the ground.

Across the four sections, answers were distributed with some differences between the categories. Overall, Strengths and Weaknesses had most answers, and most of the answers given were coded as "practical" considerations. In a SWOT analysis, the Strengths and Weaknesses will tend to be 'inward' focussed, looking at the organisations and individuals that would be involved in a scheme, and the Opportunities and Threats are more outwardly focussed, looking at enabling conditions, such as policies, as well as potential competition. It is understandable that the Strengths and Weaknesses categories would have the highest distribution of answers, as a high-level assessment of potential EbA rewarding schemes would often lead stakeholders to consider it initially from their own organisational and practical perspective. This is also supported by the highest number of responses being coded as "practical". The 'S' and 'W' categories were also discussed before the external factors were considered, and some overlap would therefore have been generated.

The responses are considered to confirm a relatively good level of understanding of the concept of PES/EbA schemes, however the focus and language used was frequently related to farmer vs water company schemes, with little discussion around wider potential opportunities, although this is potentially driven at least partially by the mix of stakeholders represented at the workshop, with a significant number from water companies, and other organisations acting as brokers in existing water company based PES schemes. In addition, current uncertainties within the UK political and policy landscape, driven by Brexit, have led to consideration of private commercial opportunities over and above government schemes where details are currently unknown.

### Strengths

Discussions and responses about strengths of the approach were to a large extent focused on the distribution of benefits and provision, and the strengthening of connections between beneficiaries and providers. The potential of making payments based on outcomes and creating cost-efficient solutions – providing an economic case for investment - were noted as key strengths of the approach. Using PES as a vehicle to effect change and create innovation, as well as creating partnerships and an integrated approach to benefits and funding from a range of actors were seen as positive factors, as well as the alignment with existing norms (e.g. localised benefits, provision of public goods, key governmental policies such as the 25 Year Environment Plan).

### Weaknesses

Weaknesses discussed at the workshop include frequent reference to perceptions of complexity and the implications of this upon the requirements of actors, organisational structures and a requirement for strong inter-organisational and inter-sector relationships. A difficulty in reconciling alignment of various schemes with existing systems, such as in terms of current funding streams and a lack of regulatory backing, were highlighted as potential weaknesses, as was the requirement for securitisation of benefits.

### Opportunities

PES schemes were considered by participants at the workshop to offer opportunities linked particularly with the loss of subsidies and the potential for schemes to provide multiple benefits linked with agricultural reform or resilience associated with diversification opportunities. The schemes were seen as potential opportunities to facilitate partnerships (for example linking in with water companies and Ofwat's increased focus on catchment management) and organisational progress, with the current political situation driving a motivation for engagement that ties well with the PROWATER project and its upcoming objectives.

### Threats

As discussed earlier a significant threat discussed within the workshop centred around the focus on water company drivers alongside a perception of complexity that may impact likely uptake. This is set alongside uncertainty in both the context of future land management schemes, climate change, economic instability and political changes.

Some of the key points raised within each of the four analysis areas are discussed further below and are summarised in Table 2 on page 26.

## Organisational Aspects

All the Organisational Strengths have been categorised as 'Facilitating Partnerships' or 'Requirements of Actors'. These relate to integration, innovation and multiple benefits. As outlined within the best practice guidance for PES (2013) 'crucially, PES schemes may provide the opportunity to contribute to wider environmental and sustainability objectives'. These are weighed against answers within the Weaknesses category relating to complexity, consistency and sustainability over time. This is considered likely to reflect a concern on behalf of attendees that there is limited in-house capacity and/or skills for systems that are not fully understood. Much of this feedback contained references to farmers and farm businesses, and is therefore taken as an assumption on their behalf. This highlights the need for a future workshop with a more diverse representation of land managers to

consider more in-depth concerns and existing skill sets that could align with potential EbA schemes. These comments are also considered to reflect the need for a knowledgeable and experienced broker, who can facilitate any scheme with defined outcomes and limit the resource requirements on both seller(s) and buyer(s).

There is a significant overlap between the organisational and practical categories as these represent a range of challenges which have therefore been coded in multiple categories.

Questions relating to organisational aspects of PES that could be explored further in future workshops include:

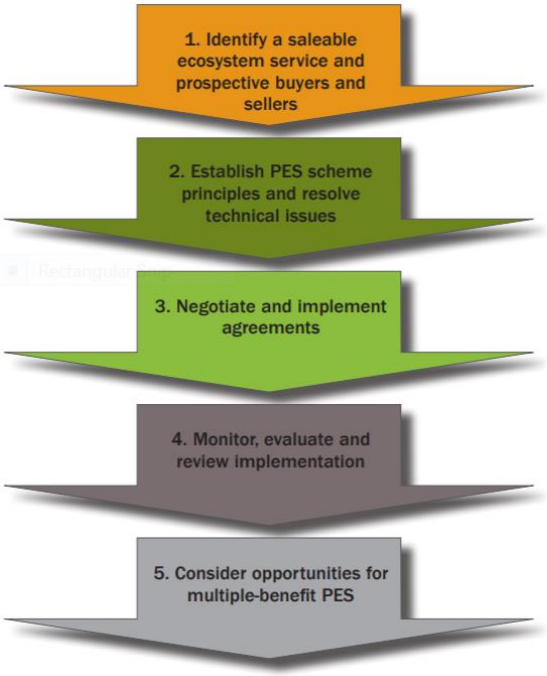
- Is the perceived complexity of PES schemes borne out in example case studies and is this likely to impact uptake from different sectors in different ways? Are there simple ways to minimise the implications on businesses and how do these compare to existing and potential payment schemes?
- What are the particular elements of schemes that make them seem complex and reduce buy-in, and do different types of sellers react differently to them?
- Does the potential benefit of an experienced 'knowledge provider' and/or 'broker' outweigh the implications of adding additional partners and organisations into a scheme?
- Given that any investment needs to reflect value over time, what guarantees can be put in place on both sides to try and achieve this ambition?
- What local organisations have an ambition or willingness to be involved in the development of PES schemes? Does the knowledge and skill sets present align with the requirements of PES?
- How can existing partnerships best support the integration of advice and building of trust between potential PES participants?
- Is farm business diversification a potential opportunity for PES schemes to increase uptake and build on win-win situations?
- What is the impact of the diverse seller landscape of the SE on potential PES design? Is a "one-size-fits-all" approach unsuitable?
- What informal rules currently determine land management practices that might have an impact on PES delivery?

### Practical Aspects

The answers grouped into the Practical aspects of PES relate frequently to cost effectiveness and multiple benefits as Strengths, as well as encouraging innovation and allowing an outcome-based system. These are all known to be strengths of the PES system, providing a clear economic case for investment. This is balanced against concerns relating to the potential complexity of schemes and the practicalities of securitisation of benefits, particularly when considered alongside required background conditions such as requirement for regulation, and factors outside of the control of buyers and sellers, such as external market forces and weather.

Whilst the workshop has raised numerous practical aspects of PES suitable for future discussion, given that practical aspects of schemes are likely to be largely driven by scheme-specific considerations a reasonable approach would seem to be a series of workshops relating to the development of specific schemes within different sectors and areas of the South of England region (and mirrored for the South

West). As set out in the Best Practice Guidance for PES, the five broad phases for designing and implementing a PES scheme are set out in the diagram below:




These broad phases will be investigated as part of the flow of work packages through the PROWATER project, however initial questions relating to practical aspects of PES that could be explored further in future workshops include:

- Are there specific land or resource management actions that have the potential to secure an increase in supply of a particular ecosystem service?
- Is it desirable to use a PES scheme to accelerate ongoing uptake of land management practices rather than introduce new interventions?
- Is an outcome-based approach feasible and/or necessary when working with complex groundwater resources?
- Is there a clear demand for the service in question and is its provision financially valuable to one or more potential buyers? Who are the beneficiaries of specific natural environment solutions, particularly in relation to climate change adaptation? How can free-riders be encouraged to contribute?
- Is it clear whose actions have the capacity to increase supply of the service in question?
- Could a number of small-scale PES schemes, geographically dispersed, achieve the same ecosystem service benefits results as fewer, larger schemes?
- Does the complexity of chalk groundwater systems in the South East and the difficulties of monitoring preclude them from PES schemes? Can this be partially offset through 'win-win' or 'no regrets' schemes that reduce the burden of evidence requirement?
- Is the absence of "true market conditions" a barrier to cost-efficient PES schemes?
- Is data available to a) set a robust baseline to demonstrate additionality and b) allow simple projections to allow a risk management approach to interventions?

- How can the benefit of strong communities and peer-pressure be exploited to crowd in sellers on a catchment scale?
- Could existing certification schemes be used to inform indicator and baseline design to increase confidence in PES schemes and their integration in wider funding mechanisms?
- Can a PES scheme be successful if it fails to engage "hard-to-reach" potential sellers?

### Political Aspects

The political aspects of the SWOT understandably relate primarily to high levels of uncertainty, land management reform and current limited regulatory enforcement. These themes run through all elements of the SWOT as they provide both strengths/opportunities and threats/weaknesses, as there are significant risks with the on-going uncertainty of the political and policy landscape, but conversely this allows opportunity for innovation and alignment with new subsidy schemes and land management reform. The focus on water company drivers is raised again here, and highlights both the mix of stakeholders in the room, as well as the current perception of schemes undertaken to date.

Given the current political situation in the UK regarding Brexit, it is tempting to conclude that the answers relating to uncertainty and coordination with current funding streams and regulation are as solely a result of the current situation, however whilst this is a primary driver, it is considered likely that this would have been the case even against a political backdrop that did not include Brexit. Numerous other assessments of EbA/PES have outlined a range of political and institutional barriers and opportunities to implementation of schemes on both local and national levels, which include lack of continuity in government and institutional weakness and insufficient policy support (Reid, Pérez de Madrid & Ramírez, 2018). Failure to engage the local community and businesses is often cited as a reason for failure of environmental schemes. It is considered imperative that this is considered within any future proposals.

Previous studies have identified that many environmental professional's willingness to try PES seemed to be driven by the frustration with the existing situation, compounded by fear of future reductions in resources for conservation (Martin-Ortegaa & Waylen, 2018).

Questions relating to political aspects of PES that could be explored further in future workshops include:

- How do the emerging land management reforms sit alongside potential PES schemes; can they provide a framework within which additional benefits can be realised?
- How can cost-effective monitoring be used to inform securitisation of benefits within any scheme in the context of a changing baseline and limited existing information?
- In the context of very limited regulation how can PES schemes ensure that there is no financial reward for compliance whilst ensuring that trust is maintained between land managers and buyers?
- Are schemes framed in a local context with community involvement more likely to be successful than those targeting regional or national benefits or incentives?
- What mechanisms are in place that could be used to inform policy decisions based on case study experiences?

## Ethical Aspects

In their study of environmental professionals and views on PES Martin-Ortegaa & Waylen (2018) concluded that 'in general, the survey indicates there is positive but cautious support for more exploration and application of PES in the UK. However, there also seems to be considerable disagreement or confusion about exactly what doing this could or should look like. Whilst this creates space for innovation, it can also complicate the challenges of designing, implementing and evaluating new projects for environmental management.'

The importance of taking ethical considerations into account is clear not only from reviewing the literature on the concept, but also the range of attitudes present in the public discourse (probably represented best in the well-known British environmental activist George Monbiot, (e.g. George Monbiot, 2014) and responses to it ( e.g. (Hamilton *et al.*, 2018)) as well as the responses received in the SWOT workshop held in December 2018. In the academic literature, a number of key ethical considerations of the application of the Ecosystem Services concept have been identified (e.g. Muradian *et al.*, 2010; Norgaard, 2010; Matzdorf *et al.*, 2012; Schröter *et al.*, 2014) that can be summarised to the following:

- Anthropocentric framing
- Socio-cultural impact
- Economic framing (and connected to it, commodification)
- Changes in motivations
- Equity implications

While ethical considerations were rarely made explicit, implications on underlying values and expectations were clear especially in discussions around localised benefits and the replacement of subsidies (after the UK left the Common Agricultural Policy) through potential PES schemes.

PES were discussed as potentially taking the role of current agricultural subsidy schemes, as well as being cost-efficient and outcome based (both of these concepts were seen as strengths of the concept). This sits interestingly in a discourse around equity and efficiency, where PES are often seen as being not only a vehicle to create cost-efficient environmental interventions that benefit potential buyers, but also to reduce poverty (Muradian *et al.*, 2010). This is reflected in some discussion about future "public money for public goods" systems in the UK and the ability to create win-win situations in which public (environmental) goods are provided by farms in a cost-efficient way alongside the alleviation of "substantial economic hardship" for these farms (Bateman and Balmford, 2018).

Equity and environmental justice implications – the fair distribution of costs and benefits from ES provision – were again not discussed explicitly but form part of the arguments made at the workshop around local ownership and were specifically phrased around intragenerational justice. PES can be seen as a tool to address the asymmetry of costs of provision and benefits from ES (Luck *et al.*, 2012). However, it should be noted that arguments made at the workshop – while having implications on justice – seemed to be made mainly from an economic perspective.

Aspects of socio-cultural change are represented in responses considering PES as a tool to create behaviour change (increasing awareness to the benefits of nature) and connections between land users and beneficiaries of ES, and an opportunity to facilitate discussion and partnership. This is

reflected in the literature, for example Schröter *et al.* (2014) identify the "vagueness" of the concept as a factor in inspiring transdisciplinary communication and integrating a range of views without necessarily requiring consensus. In the context of the workshop, this socio-cultural change was a positive outcome (strength).

Opportunities identified were linked mostly to socio-cultural change (integration of farming communities in the design of schemes, and improved connectivity between organisations, as well as a more local focus on climate adaptation) as well as equity implications (creating an alternative income for farmers and payment from private beneficiaries).

As weaknesses of the concept under an ethical perspective, key considerations emerging were the uncertainty around the distribution of benefits (e.g. connected to property rights and complexity of land management systems), and the difficulty of creating trusted relationships that were seen as necessary to implement PES. Additionally, a recurring theme was the need to conform to 'rules of the game' to allow a system to work – issues identified were a lack of rigorous enforcement of legislation, difficulty to police compliance with commitments, lack of competition and diversion from the 'polluter-pays' principle.

These translated into threats to implementation due to equity implications (with a focus too much on one type of beneficiary – water companies – and skewed by the structure of providers creating a system out of balance and unable to provide efficient and fair allocation of resources) as well as the risk of non-conformity to rules (due to lack of enforcement, lack of true market conditions or unreliability of the schemes created).

In the discussion at the workshop, there was no reference to concerns around an anthropocentric framing of nature, commodification of ecosystems or the negative effects of a socio-cultural change for example on the moral motivations towards nature protection or restoration. Only one mention was made explicitly about intrinsic values, and it was seen as a strength of PES that intrinsic value of chalk groundwater could be made explicit.

Questions around ethics arising from these discussions that could be explored further in future workshops are:

- What are fair market conditions in which a PES scheme can function and how can they be created?
- Is it desirable to allow a scheme to perform less cost-efficient if it creates a fairer distribution of benefits?
- Is it necessary to have shared aims between actors in order to create a function PES scheme?
- How can localised ownership and framing of environmental issues be created in the context of complex institutional and power structures?
- What are motivations of potential sellers currently delivering land management that is best practice?
- What mechanisms in scheme design could be used to avoid a crowding-out effect?
- Are land managers aware of their potential impact on groundwater systems and willing to make a change to protect them?
- How should "additionality" in PES schemes be defined to minimise negative perceptions from potential sellers/crowding out and maximise benefits from existing best practice stewardship?

| | Ethical | Political | Organisational | Practical |
|---|---|---|---|---|
| **S** | Create behaviour change through incentives<br>Local Ownership<br>Fair distribution of cost and benefit | Independent of government funding<br>Aligned with existing policies and values | Integrated advice and funding | Cost-efficient<br>Risk management<br>Identifies more buyers than the traditional market<br>Encourages innovation and change |
| **W** | Complexity of ownership<br>Diffuse role distribution<br>Requires trust built over long period<br>Seen as opposing "polluter pays" principle | Relies on strong regulation to support baseline<br>Funding streams and advice currently are not integrated<br>Long time delay to prove concept | Lack of true competition<br>Potentially complex schemes discourage uptake<br>Inflexible water company funding periods<br>Consistency between multiple stakeholders<br>Difficult market conditions with large number and type of sellers and focus mainly on water company drivers | Risk of high complexity in scheme design<br>Different funding stream requirements<br>External factors (weather, markets) out of control<br>Complex seller landscape |
| **O** | Create connectivity between buyers, sellers, public<br>Alternative to subsidy system<br>Potential for participatory scheme design<br>Localised climate adaptation<br>Strong seller communities<br>Case studies can present strong narratives | Policies - AONB management plans, agricultural reform, net gain reform<br>Need for a new funding system post-CAP | Link to CSF expansion into water resources<br>Business diversification and multiple benefits on seller side opens doors<br>Water industry (Ofwat, WRSE, water companies) accepting catchment management and partnership working<br>Integrating different funding streams and advice roles, including those that have been uninvolved | Links to NFM<br>Farmers open to new ideas and increasing knowledge of their impact<br>Increasing insights from behavioural sciences<br>Collaboration with buyers and sellers in design<br>Visibility of schemes creates peer pressure |
| **T** | Weak regulation allows cheating system<br>Ownership of benefits unclear<br>Distorted market conditions (water companies, powerful sellers)<br>Low confidence in PES system due to trend and lack of tangible benefits | Brexit impacts<br>Regulatory changes and weakness<br>Duplication through ELMS | Complexity of seller landscape<br>Lack of technical skills in some actors | Changes in staff<br>Changing baseline (degrading environment)<br>Ongoing land use changes as reaction to markets/climate change |

**Table 2. Overview of discussion points in different categories and SWOT sections**

## 4.3 Other Workshop Elements

The Systems Map and Policy Map undertaken in the workshop help set the framework and context in which a future PES scheme would sit, and offer additional considerations for discussion within future workshops.

**Systems Map**

- Beyond the traditional model with buyer/seller/broker other roles identified in the network include advocates/champions, regulators, peer-to-peer influencers, and beneficiaries (beyond buyers).
- Numerous organisations could be considered in multiple roles, and some that are traditionally 'buyers' e.g. water companies also have aspirations to be sellers through their land holdings.
- Generally it is considered that there is a good level of network permeation within the group.

**Policy map**

- Brexit is providing a huge level of uncertainty in terms of policy and governance going forward within the South England regional context.
- The current uncertainty and likely landscape scale change in agricultural policy provide a significant potential opportunity for PES schemes.
- Current significant regional policy drivers include the 25 year Environment Plan, PR19 - Ofwat Resilience Principle (promote ecosystem resilience and biodiversity as a key part of the as of the decision-making process for ensuring resilient services), WINEP & Water Industry Strategic Environmental Requirements, Agriculture Bill and Abstraction Reform.

Following the workshop, the evaluation responses indicate that 90% of participants slightly agree or agree with the statement 'do you feel confident that PES schemes could help enable uptake of ecosystem based adaptation measures?'.

# 5 Next Steps

As described earlier in the report, several key building blocks will need to be in place before the PROWATER partnership can successfully create a compelling case for investment in any reward scheme that will be offered to the market. As these elements are developed to support the creation of a business case for investment, several key questions emerge that need to be answered. In the context of PROWATER some of these are already known, and some will be investigated and answered as the project progresses through the suite of work packages.

- What are you trying to achieve - what are your long-term **objectives** or **goals**?
- What is the **product or service** (value proposition) that would be provided and who is the supplier of those benefits?
- Who are the **potential buyers** in the scheme and what do they want to get from the investment e.g. increased profit, reputational benefits, cost-savings, risk mitigation, increased resilience, economic growth?
- What are the factors that determine **willingness to invest** in these sorts of schemes? Are there clear needs or requirements in the marketplace (e.g. a statutory requirement)? Alternately, are there other issues/factors that compete for attention or investment?
- Is there a compelling **business case** that sets out why an EbA rewarding scheme is suitable for investment and builds confidence that the proposed return on investment will be realised?
- By what mechanism will the **return on the investment** be obtained – what does success look like to the investor and what guarantees can be provided on the security and sustainability of those return being provided (**securitisation of benefits** for what duration)?

It is considered that the overarching themes of this initial evaluation provide a framework in which the remainder of the workshops can be developed to provide answers to the questions set out above. They will also need to ensure that maximum benefit is generated to allow the development of a strategy that provides information both regionally and across the entire Interreg region. A mix of stakeholders will be required to ensure that viewpoints are captured from across the range of actors and skillsets present. Work will be needed to engage those potential actors not yet involved in the discussions. This will broaden the viewpoints and allow wider consideration including the potential for aligning streaming funds potentially not yet considered, as well as maximising the potential for multiple benefits in terms of ecosystem services and cost effectiveness.

In the South of England this approach is very well aligned to meet the challenges set out in the UK Government's 25-Year Plan for the Environment, providing a policy driver for implementation.

# 6 References


Brown, C., Walpole, M., Simpson, L. & Tierney, M. (2011) Introduction to the UK National Ecosystem Assessment. In: The UK National Ecosystem Assessment Technical Report. UK National Ecosystem Assessment, UNEP-WCMC, Cambridge

Bateman, I. J. and Balmford, B. (2018) 'Public funding for public goods: A post-Brexit perspective on principles for agricultural policy', *Land Use Policy*, 79, pp. 293–300. doi: 10.1016/j.landusepol.2018.08.022.

Department for the Environment, Farming and Rural Affairs (2018): 25 Year Environment Plan. Access: https://www.gov.uk/government/publications/25-year-environment-plan

Department for the Environment, Farming and Rural Affairs (2017): Water Abstraction Plan 2017. Access: https://www.gov.uk/government/publications/water-abstraction-plan-2017

Department for the Environment, Farming and Rural Affairs (2017): Local Action Project. Access: http://urbanwater-eco.services/

Department for the Environment, Farming and Rural Affairs (2016): Defra's Payments for Ecosystem Services Pilot Projects 2012-15 Review of key findings December 2016.

Department for the Environment, Farming and Rural Affairs (2013): Payments for Ecosystem Services: best practice guide. Access: https://www.gov.uk/government/publications/payments-for-ecosystem-services-pes-best-practice-guide

Environment Agency (2018): State of the environment: Water Resources. Access: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/709924/State_of_the_environment_water_resources_report.pdf

Environment Agency (2019): ENV15 - Water abstraction tables for England. Access: https://www.gov.uk/government/statistical-data-sets/env15-water-abstraction-tables (Accessed: 18 June 2019)

Evans, V. (2013). Guide to Developing a Business Strategy. Financial Times

Hamilton, K. *et al.* (2018) *Why we can't keep the environment separate from economics | Inside track*, *InsideTrack*. Available at: https://greenallianceblog.org.uk/2018/05/18/why-we-cant-keep-the-environment-separate-from-economics/ (Accessed: 10 April 2019).

Luck, G. W. *et al.* (2012) 'Ethical Considerations in On-Ground Applications of the Ecosystem Services Concept', *BioScience*.

Luck, G., Chan, K., Eser, U., Gómez-Baggethun, E., Matzdorf, B., Norton, B., Potschin, M. (2012) 'Ethical Considerations in On-Ground Applications of the Ecosystem Services Concept' BioScience, Volume 62, Issue 12, December 2012, Pages 1020–1029, https://doi.org/10.1525/bio.2012.62.12.4

Martin-Ortega, J. & Waylen, K. (2018) 'PES What a Mess? An Analysis of the Position of Environmental Professionals in the Conceptual Debate on Payments for Ecosystem Services', *Ecological Economics* 154, pp.218-237. doi: 10.1016/j.ecolecon.2018.08.001

Matzdorf, B. *et al.* (2012) 'Ethical Considerations in On-Ground Applications of the Ecosystem

Services Concept', *BioScience*, 62(12), pp. 1020–1029. doi: 10.1525/bio.2012.62.12.4.

Monbiot, G. (2014) *Put a price on nature? We must stop this neoliberal road to ruin | George Monbiot | Environment | The Guardian*, *The Guardian*. Available at: https://www.theguardian.com/environment/georgemonbiot/2014/jul/24/price-nature-neoliberal-capital-road-ruin (Accessed: 10 April 2019).

Muradian, R. *et al.* (2010) 'Reconciling theory and practice: An alternative conceptual framework for understanding payments for environmental services', *Ecological Economics*, 69(6), pp. 1202–1208. doi: 10.1016/j.ecolecon.2009.11.006.

NOMIS (2019): Labour Market Profile - South East. Access: https://www.nomisweb.co.uk/reports/lmp/gor/2013265928/report.aspx#tabrespop

Norgaard, R. B. (2010) 'Ecosystem services: From eye-opening metaphor to complexity blinder', *Ecological Economics*, 69(6), pp. 1219–1227. doi: 10.1016/j.ecolecon.2009.11.009.

Ofwat (2019): Conserving water, accessed at: https://www.ofwat.gov.uk/households/conservingwater/ (Accessed: 18 June 2019)

Pechey, L., White, C., Rowcroft, P., and Smith, S. (2013). The Role of Payments for Ecosystem Services in Climate Change Adaptation. Defra, London.

Schröter, M. *et al.* (2014) 'Ecosystem Services as a Contested Concept: a Synthesis of Critique and Counter-Arguments', *Conservation Letters*. Wiley Online Library, 7(6), pp. 514–523. doi: 10.1111/conl.12091.

South West Water and Bournemouth Water (2018): Draft Water Resources Management Plan. Access: https://www.southwestwater.co.uk/siteassets/document-repository/environment/draft-wrmp19-technical-report-and-appendices-07-03-2018-web.pdf

UK National Ecosystem Assessment (2011): The UK National Ecosystem Assessment: Synthesis of the Key Findings. Access: http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx

Wamsler, C., L. Niven, T. H. Beery, T. Bramryd, N. Ekelund, K. I. Jönsson, A. Osmani, T. Palo, and S. Stålhammar. 2016. Operationalizing ecosystem-based adaptation: harnessing ecosystem services to buffer communities against climate change. Ecology and Society 21(1):31

Water Resources South East (2019). Access: http://www.wrse.org.uk/

# 7 Appendix 1 – SWOT Results Analysis (Challenges of PES)

| Comment | Code Theme | *Notes* | *(repeated)* | SWOT | Category |
|---|---|---|---|---|---|
| Behaviour change – difficult to make to ecosystems services thinking | socio-cultural impact | Here as strength, but potential changer in motivation undermining "moral" incentives? | | S | ethical |
| Creates a stronger connection between land users and those who ultimately rely on it e.g. water companies | socio-cultural impact | Equity & socio-cultural impact - potential to create stronger community, inclusive approach | | S | ethical |
| Can be explicit about the outcome you want | distribution of benefits and burden of provision | justifies expenditure on part of buyer | | S | ethical |
| Can be logical and easy to understand | conformity to 'rules of the game' | Accessible concept - involved actors understand the premise and therefore have equal opportunities? | practical | S | ethical |
| Can demonstrate outcomes as can incorporate monitoring | distribution of benefits and burden of provision | justifies expenditure and allows reconsidering of initial decision if outcomes monitored diverge from those expected or have unintended consequences | | S | ethical |
| Chalk GW is hugely valuable – including an inherent value worth preserving | recognition of intrinsic value | Intrinsic, moral value of protection of this specific resource | | S | ethical |
| Drives behaviour change and increases awareness to positive benefits | socio-cultural impact | Here as strength, but potential changer in motivation undermining "moral" incentives? | political | S | ethical |
| Encouraging discussion and partnership | socio-cultural impact | Building community and shared goals - socio-cultural benefit, inclusive approach to decision making on shared resources | | S | ethical |
| Local benefits and local outcomes for clear buyers as opposed to tax | distribution of benefits and burden of provision | Equity (ie everyone is given what they need)- environmental justice considerations around who gets paid and what (for), who has a "right" to something - spatial connections are one aspect of this. See e.g. Luck et al 2012 https://academic.oup.com/bioscience/article/62/12/1020/230542 | political | S | ethical |
| Local Ownership – PES Payments realise benefits on a local level | distribution of benefits and burden of provision | Equity - similar to above. Also: local ownership often cited as a driver for improved treatment of environment/assets | political | S | ethical |
| Outcomes-based systems – monitoring scheme allows for payment against measurable benefit | distribution of benefits and burden of provision | justifies expenditure and allows reconsidering of initial decision if outcomes monitored diverge from those expected or have unintended consequences | | S | ethical |
| PES can be outcome based | equity implications | Equity/Fairness - payment for results can be positive because it means the buyer only pays for what they get - on the other hand, provision might not cost the same to every seller? | | S | ethical |
| Source of income especially in view of changing subsidies | equity implications | Equity - fair payment of land management BUT also possibility of c hanging motivation through incentives for self-interest, ie motivational crowding out | political, practical | S | ethical |

| Comment | Code Theme | *Notes* | *(repeated)* | SWOT | Category |
|---|---|---|---|---|---|
| Vehicle to effect change | socio-cultural impact | Here as strength, but potential changer in motivation undermining "moral" incentives? | political | S | ethical |
| Complexity in land management – who do you liaise with, who gets the £ benefit | distribution of benefits and burden of provision | ownership of benefits and risk is unclear, and implications of property rights are not understood completely, is this necessary for system design of PES? | organisational | W | ethical |
| Difficult to get permanent changes | socio-cultural impact | long-term implications - if community buy in exists but then is not sustained, this might have negative implications for delivery of any future work; also raises questions about value of investment; reduces flexibility of sellers to react to other incentives or motivations if locked in | | W | ethical |
| Farmers currently don't want to engage with an ethical broker linked to a regulator (ie govt) | socio-cultural impact | implications - why do farmers not want to engage with gvt brokers and what does that mean for the role of neutral brokers? | political | W | ethical |
| Market driver so can be variable and out of control of buyer | equity implications | return for investment uncertain - potential justice implications? Risk of failure | practical | W | ethical |
| May be difficult o sell to farmers if PES does not work with them | socio-cultural impact | socio-cultural/motivation: need for a system design that works for sellers and takes into account drivers and motivations, otherwise risk of failure | political | W | ethical |
| Maybe difficult to police and so potentially open to abuse | conformity to 'rules of the game' | free-rider issue - equity, motivation and socio-cultural impacts? | | W | ethical |
| Measures should be long term sustainable | conformity to 'rules of the game' | long-term implications - if community buy in exists but then is not sustained, this might have negative implications for delivery of any future work; also raises questions about value of investment; reduces flexibility of sellers to react to other incentives or motivations if locked in | organisational, practical | W | ethical |
| Outcome can be affected by properties changing hands | distribution of benefits and burden of provision | should future owners/managers be bound by previous commitments? On what terms/ | | W | ethical |
| Perceived as not compliant with polluter pays | conformity to 'rules of the game' | moral considerations of PES - who should be paid/who should be paying? | political | W | ethical |
| Pursue perception of PES? How well understood? Need societal acceptance. Long Term planning. | socio-cultural impact | perception of pes - what is the motivation for payments/conservation? | | W | ethical |
| Takes time to foster a trusted relationship | socio-cultural impact | potential to build stronger community, why is trust important and what does it depend on? | | W | ethical |
| True competition (where needed) may not exist – e.g. | conformity to 'rules of the game' | unfair distribution of resources? Risk of failure of system | organisational, practical | W | ethical |

| Comment | Code Theme | *Notes* | *(repeated)* | SWOT | Category |
|---|---|---|---|---|---|
| large agricultural groups | | | | | |
| Connectivity between organisations, land management etc | socio-cultural impact | | | O | ethical |
| Farmers in SE are second most dependent on subsidies so a new system can offer them an alternative income | socio-cultural impact | | political, practical | O | ethical |
| Farming/seller communities are strong | socio-cultural impact | | organisational | O | ethical |
| PES gives climate adaptation a more local focus and makes it an issue that can be tackles | distribution of benefits and burden of provision | | | O | ethical |
| Work with farmers to co-design scheme | socio-cultural impact | | | O | ethical |
| Storytelling through specific schemes | | | | O | ethical |
| Potential for public owned land management changes to be funded by private money | distribution of benefits and burden of provision | | | O | ethical |
| Seen as the band wagon | conformity to 'rules of the game' | | | T | ethical |
| Poor enforcement of regulation | conformity to 'rules of the game' | | | T | ethical |
| Too much focus on water company drivers | distribution of benefits and burden of provision | | | T | ethical |
| Unclear understanding of ownership of benefits – complex buyer landscape | distribution of benefits and burden of provision | | | T | ethical |
| Lack of a market due to large farm sizes and contract farming | conformity to 'rules of the game' | | | T | ethical |
| Lack of credibility due to lack of tangible results | equity implications | | | T | ethical |
| Buyer market is too narrow (focused on WC) | equity implications | | | T | ethical |
| Lots of short term initiatives and projects that are not sustainable and prevent strong buy in | conformity to 'rules of the game' | | | T | ethical |
| Benefits from good farming practice – but not joined up e.g. WQ, WR, needs | Requirements of actors | opportunity to simplify system for all involved organisations | practical | S | organisational |

| Comment | Code Theme | *Notes* | *(repeated)* | SWOT | Category |
|---|---|---|---|---|---|
| to link to obtain all benefits | | | | | |
| Cost effective risk management for assets | Requirements of actors | simple business case | practical | S | organisational |
| Encourages innovation e.g. via farmers' groups | Facilitating partnerships and progress | creates opportunity for improved practices | practical | S | organisational |
| Innovation and incentive | Facilitating partnerships | creates opportunity for improved practices | | S | organisational |
| Integrated advice for multiple benefits | Facilitating partnerships | opportunity to simplify system for all involved organisations | practical | S | organisational |
| Complexity in land management – who do you liaise with, who gets the £ benefit | Organisational structures | Farm businesses cannot add more admin time and complex systems to their work | ethical, practical | W | organisational |
| Complexity is not going to be accepted by farmers | Requirements of actors | Farm businesses cannot add more admin time and complex systems to their work | practical | W | organisational |
| Consistency – complex multi stakeholder issues | Organisational structures | Farm businesses cannot add more admin time and complex systems to their work | | W | organisational |
| Difficult to get permanent changes | Organisational structures | investment needs to reflect value over time - this means a long term guarantee needs to be in place on both sides | practical | W | organisational |
| Measures should be long term sustainable | Requirements of actors | investment needs to reflect value over time - this means a long term guarantee needs to be in place on both sides | ethical, practical | W | organisational |
| True competition (where needed) may not exist – e.g. large agricultural groups | Organisational structures | smaller organisations or individuals might not be encouraged to participate | organisational | W | organisational |
| Water company funding mechanisms over 5 years | Organisational structures | inherent cycles within WaCo may drive timelines | practical | W | organisational |
| CSF expanding to include water resources (eg Little Stour) | Skillset required | | | O | organisational |
| Diversification of businesses and environment | Requirements of actors | | | O | organisational |
| Farmers open to schemes that provide multiple benefits | Facilitating partnerships and progress | | | O | organisational |
| Farming/seller communities are strong | Organisational structures | | ethical | O | organisational |
| Increase farm diversification and thus resilience | Requirements of actors | | | O | organisational |
| Innovation | Facilitating partnerships and progress | | | O | organisational |
| Ofwat started to embrace more holistic thinking eg catchment management | Facilitating partnerships and progress | | | O | organisational |
| PES brokers can support RPA advice giving in integrated way | facilitating partnerships | | | O | organisational |

| Comment | Code Theme | *Notes* | *(repeated)* | SWOT | Category |
|---|---|---|---|---|---|
| PROWATER/PES presents new opportunities to meet hard to reach groups (eg highways) | facilitating partnerships | | | O | organisational |
| Water companies in SE are becoming more outward looking and partnership working | Facilitating partnerships and progress | | | O | organisational |
| WRSE looking more joined up (more than just water companies) | Organisational structures | | | O | organisational |
| Buyer market is too narrow (focused on WC) | Facilitating partnerships and progress | | | T | organisational |
| Complexity and no one size contract farming | Organisational structures | | | T | organisational |
| Farmers may see PES as a financial replacement for agricultural payments | Requirements of actors | | | T | organisational |
| Lack of a market due to large farm sizes and contract farming | Organisational structures | | | T | organisational |
| Lack of uptake by farmers due to complexities | Organisational structures | | | T | organisational |
| Powers moved to Rural Payments Agency – lack of technical knowledge | Skillset required | | | T | organisational |
| Too much focus on water company drivers | Facilitating partnerships and progress | | | T | organisational |
| Cost effective for buyers and sellers | market environmentalism - neoliberalisation of nature | When little public funds are available cost effectiveness is crucial | practical | S | political |
| Drives behaviour change and increases awareness to positive benefits | alignment with existing systems and policies | political instrument | political | S | political |
| Local benefits and local outcomes for clear buyers as opposed to tax | alignment with social norms and values | Politically potentially an advantage in arguing for PES scheme over tax if clear rationale of payments | ethical | S | political |
| Local Ownership – PES Payments realise benefits on a local level | alignment with social norms and values | Advantage in getting buy-in on local/regional level - control sits with local organisations | ethical | S | political |
| PES allows you to identify more buyers/local buyers rather than traditional agri-environment scheme | Influence | Responsibility/blame does not sit with one organisation | practical | S | political |
| PES not time limited e.g. during changes in govt, policy | dependence on political process | Not dependent on political uncertainty | practical | S | political |
| Source of income especially in view of changing subsidies | market environmentalism | creates self-regulating support system for a sector that depends on public funds | ethical, practical | S | political |

| Comment | Code Theme | *Notes* | *(repeated)* | SWOT | Category |
|---|---|---|---|---|---|
| | - neoliberalisation of nature | | | | |
| Ties in well with govt's greening policy | alignment with existing systems and policies | alignment with political commitments | | S | political |
| Vehicle to effect change | alignment with existing systems and policies | political instrument | ethical | S | political |
| Can be difficult to explain to public | alignment with social norms and values | | practical | W | political |
| Changes in policy – uncertainty about future | dependence on political process | If PES are politically driven then change in policy puts system at risk | | W | political |
| Coordination is difficult in current regulator approaches to achieve multiple benefits | alignment with existing systems and policies | double counting, overheads, bureaucracy | practical | W | political |
| Different funding streams not coming together | alignment with existing systems and policies | double counting, overheads, bureaucracy | practical | W | political |
| Ensuring compliance with limited regulatory backing | alignment with existing systems and policies | potential for regulator to support delivery through monitoring, but this would mean less "hands-off" approach - and require more funding and powers? | practical | W | political |
| Farmers currently don't want to engage with an ethical broker linked to a regulator (ie govt) | Influence | If driver comes from government actors might be less willing to engage | ethical | W | political |
| May be difficult o sell to farmers if PES does not work with them | Influence | difficulty to justify move to a system that is not gaining track? | ethical | W | political |
| Perceived as not compliant with polluter pays | alignment with social norms and values | Need to justify move t different approach of funding, government needs to communicate need for regulation | ethical | W | political |
| Political cycle damages continuity and momentum | dependence on political process | If PES are politically driven then change in policy puts system at risk | | W | political |
| We need more effective regulation for the system to work | alignment with existing systems and policies | Pes don't operate in isolation and need strong regulation to make them work | | W | political |
| Will take time to prove it works | Motivation for engagement | spending without sufficient evidence base | practical | W | political |
| Agricultural reform | alignment with existing systems and policies | | | O | political |
| AONB management plan (LAs have to take it into account) review 2020-2024 – opportunity for PROWATER to input PTO | alignment with existing systems and policies | | | O | political |
| Farmers in SE are second most dependent on subsidies so a new system can offer them an alternative income | Motivation for engagement | | ethical, practical | O | political |

| Comment | Code Theme | *Notes* | *(repeated)* | SWOT | Category |
|---|---|---|---|---|---|
| Net Gain link into farming | alignment with existing systems and policies | | | O | political |
| People/land owners etc will be looking for new funding models post Brexit | Motivation for engagement | | | O | political |
| PES picks up loss of other subsidies to farms (ELMS, Net Gain) | Motivation for engagement | | | O | political |
| Uncertainty enables us to get on and be well placed to present answer | dependence on political process | | | O | political |
| Brexit and uncertain policy landscape | dependence on political process | | | T | political |
| Buyer market is too narrow (focused on WC) | Influence | | | T | political |
| Duplication eg new ELM scheme duplicates potential PES scheme | Motivation for engagement | | | T | political |
| Lack of credibility due to lack of tangible results | | | | T | political |
| Poor enforcement of regulation | alignment with existing systems and policies | | | T | political |
| Seen as the band wagon | Motivation for engagement | | | T | political |
| Too much focus on water company drivers | Influence | | | T | political |
| Uncertainty (political, financial, …) | dependence on political process | | | T | political |
| Uncertainty of ELMS | dependence on political process | | | T | political |
| Behaviour change – difficult to make to ecosystems services thinking | facilitating new opportunities | | ethical | S | practical |
| Benefits from good farming practice – but not joined up e.g. WQ, WR, needs to link to obtain all benefits | alignment with existing systems | opportunity for simplification of current subsidy/payment system | organisational | S | practical |
| Can be logical and easy to understand | complexity | accessible | ethical | S | practical |
| Can demonstrate outcomes as can incorporate monitoring | securitisation of outcomes | evidence base | | S | practical |
| Cost effective for buyers and sellers | economic case for investment | business case | political | S | practical |
| Cost effective risk management for assets | economic case for investment | business case for investing in risk reduction | organisational | S | practical |
| Cost effective solutions to complex issues | economic case for investment | business case | | S | practical |
| Drives behaviour change and increases awareness to positive benefits | facilitating new opportunities | potential long term change - once system is set up, the change in behaviour perpetuates it? BUT what about crowding out of other | ethical | S | practical |

| Comment | Code Theme | *Notes* | *(repeated)* | SWOT | Category |
|---|---|---|---|---|---|
| | | motivations and risk of loss of funding leading to reduced outcomes | | | |
| Encourages innovation e.g. via farmers' groups | facilitating new opportunities | long term benefits as well as short term as opportunities are created to come up with new solutions | organisational | S | practical |
| Innovation and incentive | facilitating new opportunities | long term benefits as well as short term as opportunities are created to come up with new solutions | | S | practical |
| Integrated advice for multiple benefits | alignment with existing systems | opportunity for simplification of current subsidy/payment system | practical | S | practical |
| Knowledge exists – good body of knowledge there academically (w transfer to practical schemes) | available evidence | evidence base | | S | practical |
| Outcomes-based systems – monitoring scheme allows for payment against measurable benefit | securitisation of outcomes | evidence base | | S | practical |
| PES allows you to identify more buyers/local buyers rather than traditional agri-environment scheme | alignment with market criteria | More robust market if funding comes from multiple sources, less reliance on one sector (otherwise similar to govt funding?) | political | S | practical |
| PES can be cheaper than technical alternatives | economic case for investment | business case | | S | practical |
| PES not time limited e.g. during changes in govt, policy | | potential reduced uncertainty whe entering scheme | political | S | practical |
| Source of income especially in view of changing subsidies | facilitating new opportunities | willingness to enter scheme to retain additional funding | ethical, political | S | practical |
| Vehicle to effect change | facilitating new opportunities | potential long term change - once system is set up, the change in behaviour perpetuates it? BUT what about crowding out of other motivations and risk of loss of funding leading to reduced outcomes | ethical | S | practical |
| Big agribusinesses in SE want larger investment to make a change | economic case for investment | size of investment needed to generate interest could be too big to allow small trials with effect | | W | practical |
| Can be difficult to explain to public | complexity | difficulty to engage | political | W | practical |
| Chalk GW systems complex and poorly understood and we have a lot of them | available evidence | uncertainty about impact and how to influence ES provision | | W | practical |
| Complexity is not going to be accepted by farmers | complexity | difficulty to engage | organisational | W | practical |
| Consistency – complex multi stakeholder issues | actor constellations | need for | | W | practical |
| Coordination is difficult in current regulator approaches to achieve multiple benefits | required background conditions | confusing system, double-counting | political | W | practical |
| Could make things more complex than needed – | complexity | | | W | practical |

| Comment | Code Theme | *Notes* | *(repeated)* | SWOT | Category |
|---|---|---|---|---|---|
| sometimes only need a few buyers and sellers | | | | | |
| Different funding streams not coming together | alignment with existing systems | confusing system, double-counting | political | W | practical |
| Difficult to get permanent changes | facilitating new opportunities | how to guarantee measures long term for buyers without putting off sellers | | W | practical |
| Ensuring compliance with limited regulatory backing | required background conditions | Policing of compliance could create big overheads and be unsustainable without regulator supporting action? | political | W | practical |
| Large number and diverse type of sellers in the SE | actor constellations | is there a one size fits all solution or does it need bespoke systems? | | W | practical |
| Market driver so can be variable and out of control of buyer | securitisation of outcomes | outcomes can be uncertain | ethical | W | practical |
| Markets/weather will affect schemes – payments, productivity etc | required background conditions | outcomes can be uncertain | | W | practical |
| Measures should be long term sustainable | securitisation of outcomes | how to guarantee measures long term for buyers without putting off sellers | ethical, organisational | W | practical |
| Outcome can be affected by properties changing hands | securitisation of outcomes | outcomes can be uncertain | ethical | W | practical |
| Outcomes based systems require monitoring baseline – pre- and post performance. Cost of monitoring | skillset required | Monitoring cost and expertise required | | W | practical |
| Pes is a young science- few case studies | available evidence | lack of evidence | | W | practical |
| True competition (where needed) may not exist – e.g. large agricultural groups | alignment with market criteria | market system might not work if there is no competition, outcomes might not be effective' | organisational | W | practical |
| Unknown pool of ethical brokers in the SE | actor constellations | competition? | | W | practical |
| Water company funding mechanisms over 5 years | alignment with existing systems | time limitation/ slow pace of movement between periods? | organisational | W | practical |
| Will take time to prove it works | available evidence | period of uncertainty when investment is necessary | political | W | practical |
| Current brokering situation not working as well means opportunity to reinvent it | actor constellations | | | O | practical |
| Farmers in SE are second most dependent on subsidies so a new system can offer them an alternative income | facilitating new opportunities | | | O | practical |
| Farmers open to schemes that | facilitating new opportunities | | ethical, political | O | practical |

| Comment | Code Theme | *Notes* | *(repeated)* | SWOT | Category |
|---|---|---|---|---|---|
| provide multiple benefits | | | | | |
| Flood management | alignment with existing systems | | | O | practical |
| Higher level of understanding – sellers are getting more knowledge to understand their impacts and influence. Peer pressure | skillset required | | | O | practical |
| Net Gain link into farming | alignment with existing systems | | | O | practical |
| People/land owners etc will be looking for new funding models post Brexit | facilitating new opportunities | | | O | practical |
| Storytelling through specific schemes | available evidence | | | O | practical |
| Use emerging behavioural science insights from other sectors/industries | available evidence | | | O | practical |
| Work with farmers to co-design scheme | facilitating new opportunities | | | O | practical |
| Change of staff, councillors, politicians, sec of state | required background conditions | | | T | practical |
| Duplication eg new ELM scheme duplicates potential PES scheme | alignment with existing systems | | | T | practical |
| Farmers may see PES as a financial replacement for agricultural payments | facilitating new opportunities | | | T | practical |
| General deterioration of background state so cannot prove positive impact | required background conditions | | | T | practical |
| Lack of credibility due to lack of tangible results | available evidence | | | T | practical |
| Land Use Change due to climate change and economic changes | required background conditions | | | T | practical |
| Lots of short term initiatives and projects that are not sustainable and prevent strong buy in | required background conditions | | | T | practical |
| Powers moved to Rural Payments Agency – lack of technical knowledge | skillset required | | | T | practical |
| Time lag to prove positive change is long | securitisation of outcomes | | | T | practical |
| Uncertainty (political, financial, …) | required background conditions | | | T | practical |