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# How trading in water-based environmental services can increase investment in nature

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Director of Operations

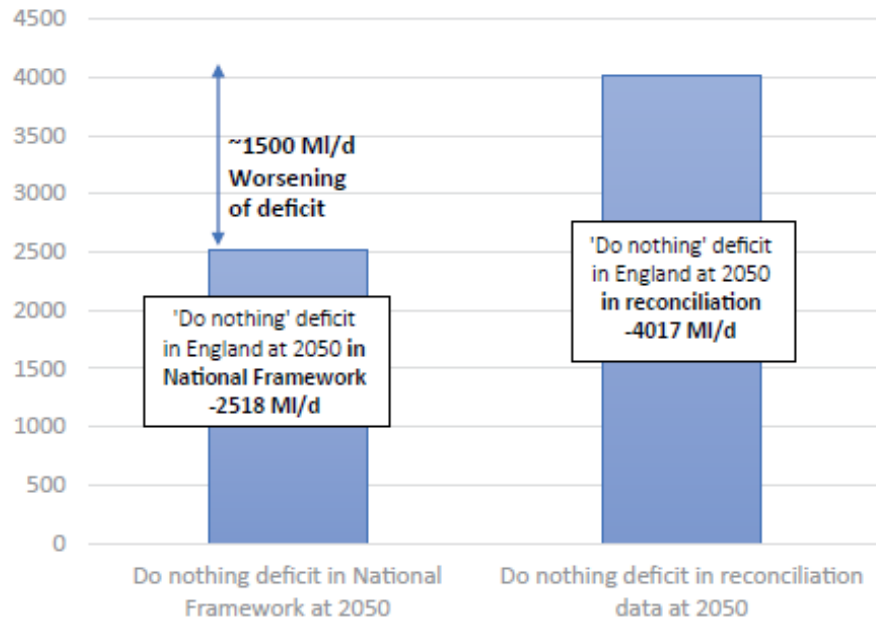
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- Context
- Simple case studies
- Generating green investment at scale
- Catchment Markets: accelerating investment in a green-recovery
- Questions

# Context

Water problems, nature-based solutions

# Water quantity challenges in England



The latest regional plan data shows a significantly more challenging 'do nothing' public water supply-demand balance than the equivalent data from the National Framework, published in March 2020. There is **~1500 ML/d** worsening of the national deficit.

Source: *The Water Report*, February 2022

There could be up to **59% more**  
**PRECIPITATION**  
in winters by 2050

In 2020 there are **5.2 million**  
homes and businesses at risk of  
**FLOODING**

Up to **1.15m**  
**SEA LEVEL RISE**  
by 2100

Source: 2020 Flood and Coastal Erosion Risk Management Strategy, Environment Agency

# Water quality challenges in England

Figure 1: Environment Agency indicators for water quality in rivers in England

## Biology

### Fish

**42% at good status**

### Invertebrates

**76% at good status**

### Macrophytes and phytobenthos

**45% at good status**

## Physical modification

### Morphology

**49% at good status**

### Flow regime

**88% at good status**

## Water quality

### Dissolved oxygen

**82% at good status**

### Ammonia

**92% at good status**

### Phosphorus

**45% at good status**

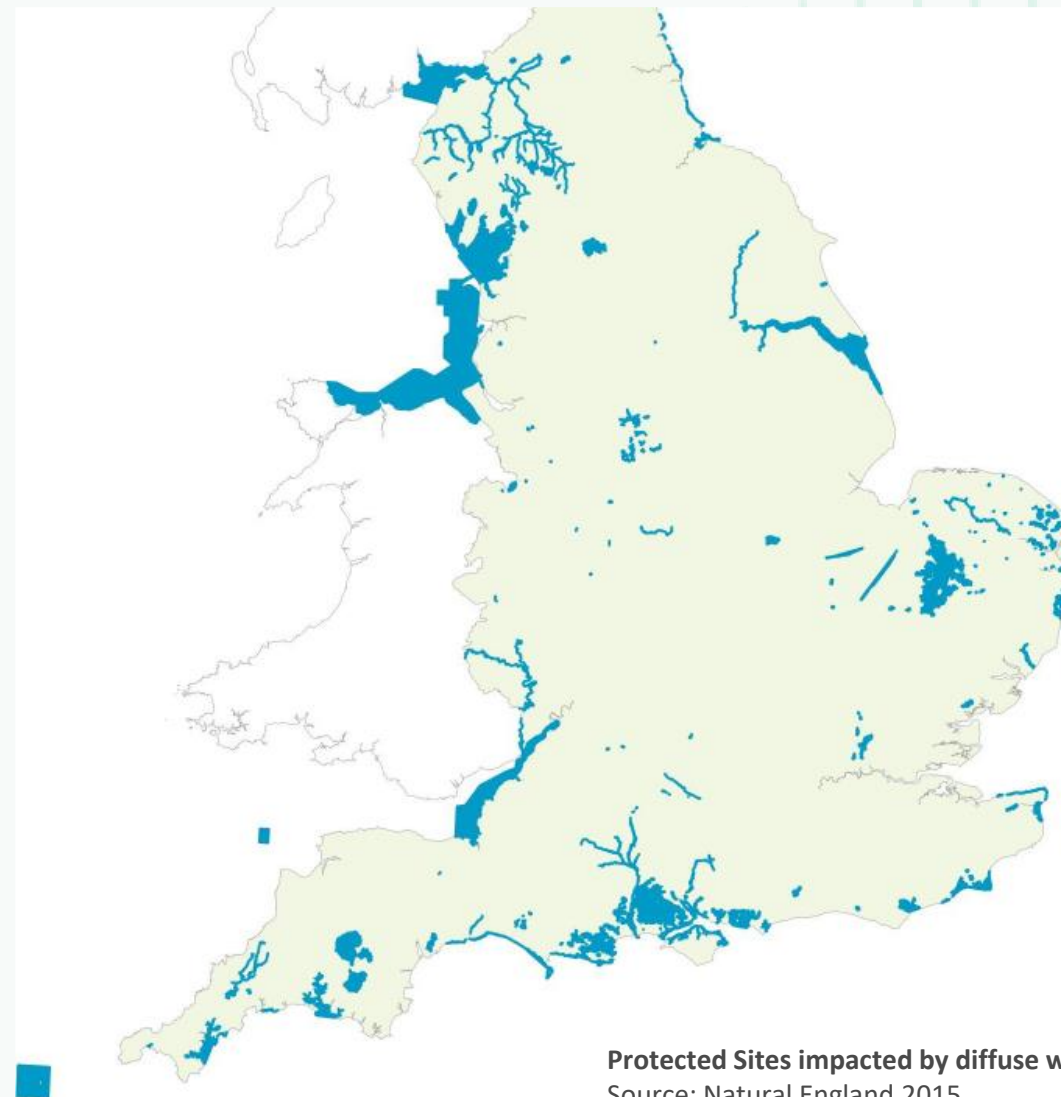
## Hazardous substances

### Chemical status

**0% at good status**

### Chemical status excluding uPBTs

**93% at good status**



**Protected Sites impacted by diffuse water pollution**

Source: Natural England, 2015

N2K Diffuse Water Pollution Theme Plan



# Transforming the solutions for water



**EnTrade** Asset based solutions



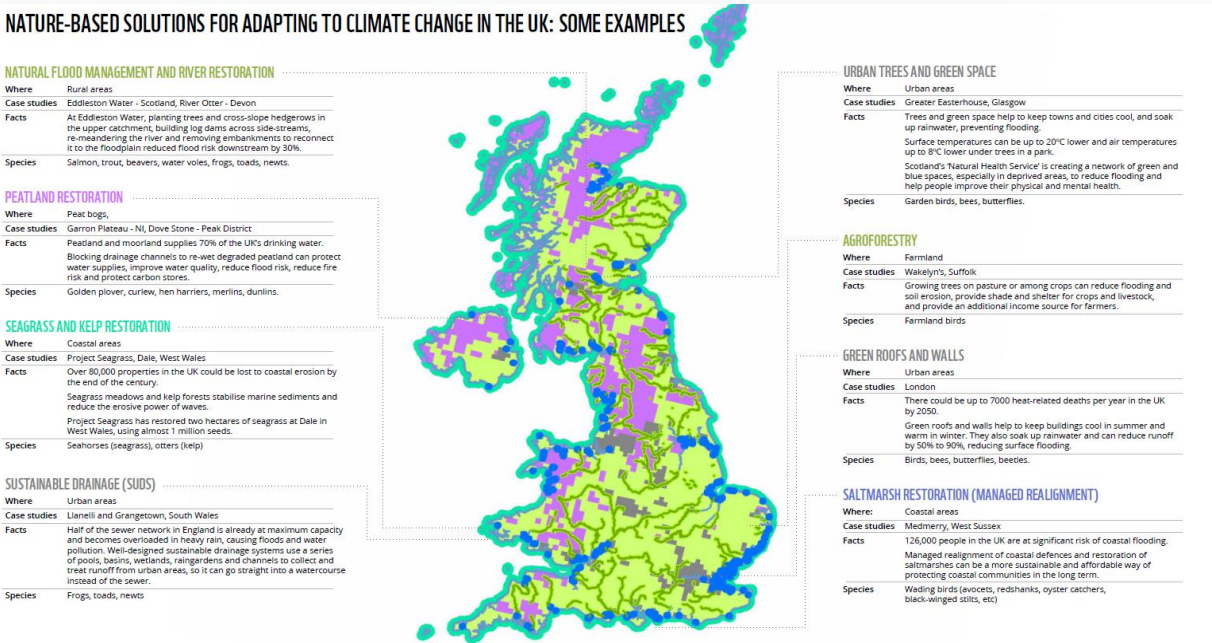
**Catchment based solutions**



**Nature based solutions**



# Nature-based solutions



Source: Smith, A. and Chausson. A. (2021) *Nature-based Solutions in UK Climate Adaptation Policy. A report prepared by the Nature-based Solutions Initiative at the University of Oxford for WWF-UK and RSPB.*





# Simple case studies





# Cleaner estuaries and lower water bills

<b>Client</b>	<b>Wessex Water Services Ltd</b>
<b>Service</b>	Twice-yearly auctions to buy cover crops and arable reversion, prices based on Nitrogen reduction performance using bespoke nutrient reduction models in Poole Harbour, Dorset
<b>Partners</b>	University of Exeter (auction theorists to support market design)
<b>Objective</b>	Increase efficiency of deals with farmers for catchment management actions that reduce Nitrogen releases into Poole Harbour, to avoid costly investment in Dorchester Water Recycling Centre
<b>Outcomes</b>	<ol style="list-style-type: none"><li>1. Market design maximised engagement with farmers</li><li>2. 80% of eligible farmland has been entered into the market</li><li>3. Annual Nitrogen offset now exceeds 60 tonnes per annum</li><li>4. Stable, competitive price for Nitrogen maintained</li></ol>



*“We reduced the cost of administering catchment deals with farmers by 40%”*

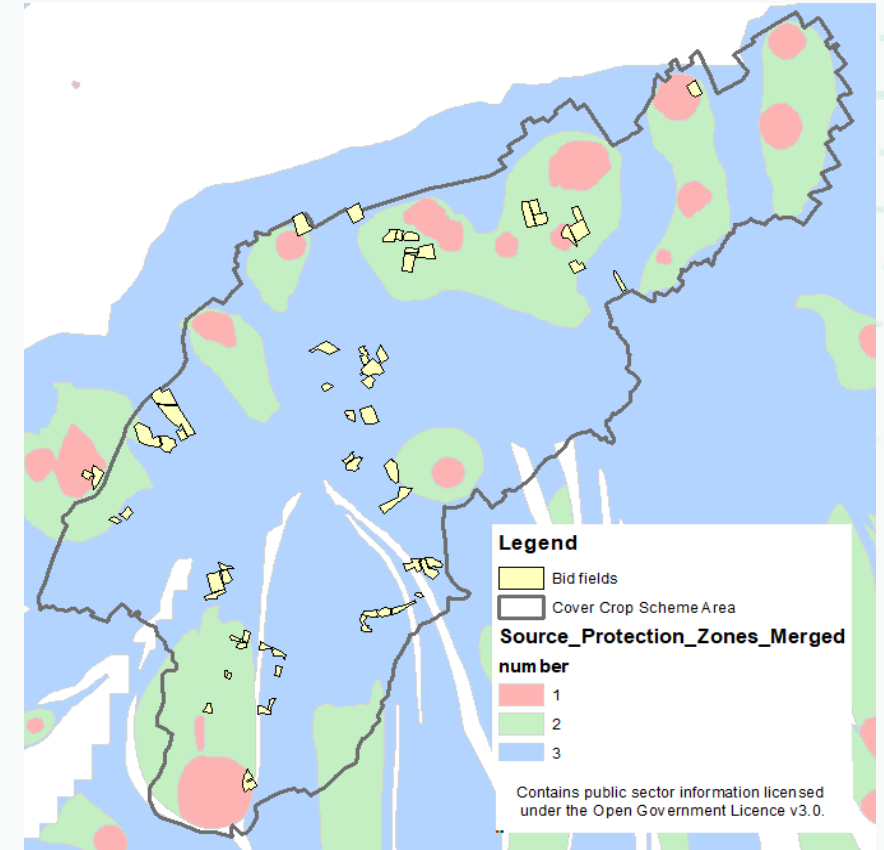


**Ruth Barden, Director of Environment**



# Partnering to protect Hertfordshire's ground water

<b>Client</b>	<b>Affinity Water and Cambridge Water</b>
<b>Service</b>	Reverse auctions and verification tools to make cost-effective deals with farmers to plant over-winter cover crops in targeted zones in Hertfordshire.
<b>Partners</b>	FWAG East
<b>Objective</b>	To build a partnership with farmers that rewards sustainable farming by paying for cover crops to protect drinking water sources from excessive nitrate releases.
<b>Outcomes</b>	<ol style="list-style-type: none"><li>1. Over 35 tonnes of nitrogen saved from entry into drinking water sources, doubled relative to first year of the scheme</li><li>2. Farmers controlling 7,200 hectares of farmland entered the market</li></ol>



*"It's a fantastic result, which will see us working with even more farms than last year. Working together with Affinity Water ensures we give farmers a consistent, attractive deal."*

**Caroline Cooper, Director of Asset Strategy**



# Nutrient Neutrality to unlock housing for Wiltshire

<b>Client</b>	<b>Wiltshire Council</b>
<b>Service</b>	Run a market place in the Pewsey Vale to seek best-value deals with farmers for land use change (wetlands and woodlands), priced according to the amount of validated Phosphorus reduction that could be claimed, and the duration of the reduction
<b>Partners</b>	Wessex Water (buyer of short-term measures), Black Sheep Countryside Management and CSF (farmer engagement)
<b>Objective</b>	Enable planning permissions for new housing to be granted by offsetting additional Phosphorus pollution caused by growth, in line with permanence requirements of the Habitats Regulations
<b>Outcomes</b>	<ol style="list-style-type: none"><li>1. Contracts for 25kg of long-term reductions agreed in first phase, sufficient to meet initial offset requirements</li><li>2. Phosphorus reduction models validated with regulators</li><li>3. Contracting and funding model to assure permanent delivery close to finalisation with NE</li><li>4. Novel form of Phosphorus reduction (Minimum Tillage system) bought by Wessex Water, with a connected Carbon Offset</li></ol>



*“This is game-changing for housing supply in Wiltshire. It also creates new ways to meet our biodiversity, Net Zero and flood risk management goals”*



# Multi buyer, multi benefit natural capital markets to reward farmers

<b>Client</b>	<b>Wessex Water, Environment Agency &amp; Defra</b>
<b>Service</b>	Provide a trading platform that translates nature-based project proposals into measurable natural capital outcomes, allow farmers to bid and contract with clear knowledge of the level of natural capital they create in Poole Harbour
<b>Partners</b>	Natural Capital Research (algorithms for nat cap gains) + University of Exeter (market design)
<b>Objective</b>	Explore how online market places can allow public and private funding to be blended to reward farmers in proportion to the private and public goods generated by nature based projects, inform Defra E.L.M. Tests and Trials in 2021
<b>Key Metrics</b>	<ol style="list-style-type: none"><li>1. Nutrient offsets and Biodiversity gains for Wessex Water</li><li>2. Natural Flood Risk reduction for the Environment Agency</li><li>3. Carbon storage, soil erosion reduction and pollination gains for Defra</li><li>4. Positive feedback on processes from farmers</li></ol>



## Here's the values for your application:

Field PH 2

Carbon Sequestration - 44 tonnes per ha over 70 years

Soil Erosion Avoided - 3.82 tonnes per hectare

Pollination - 0.28 Units

Water Flow Attenuation - 105.29 m3 per hectare

Biodiversity Units - 1 Unit

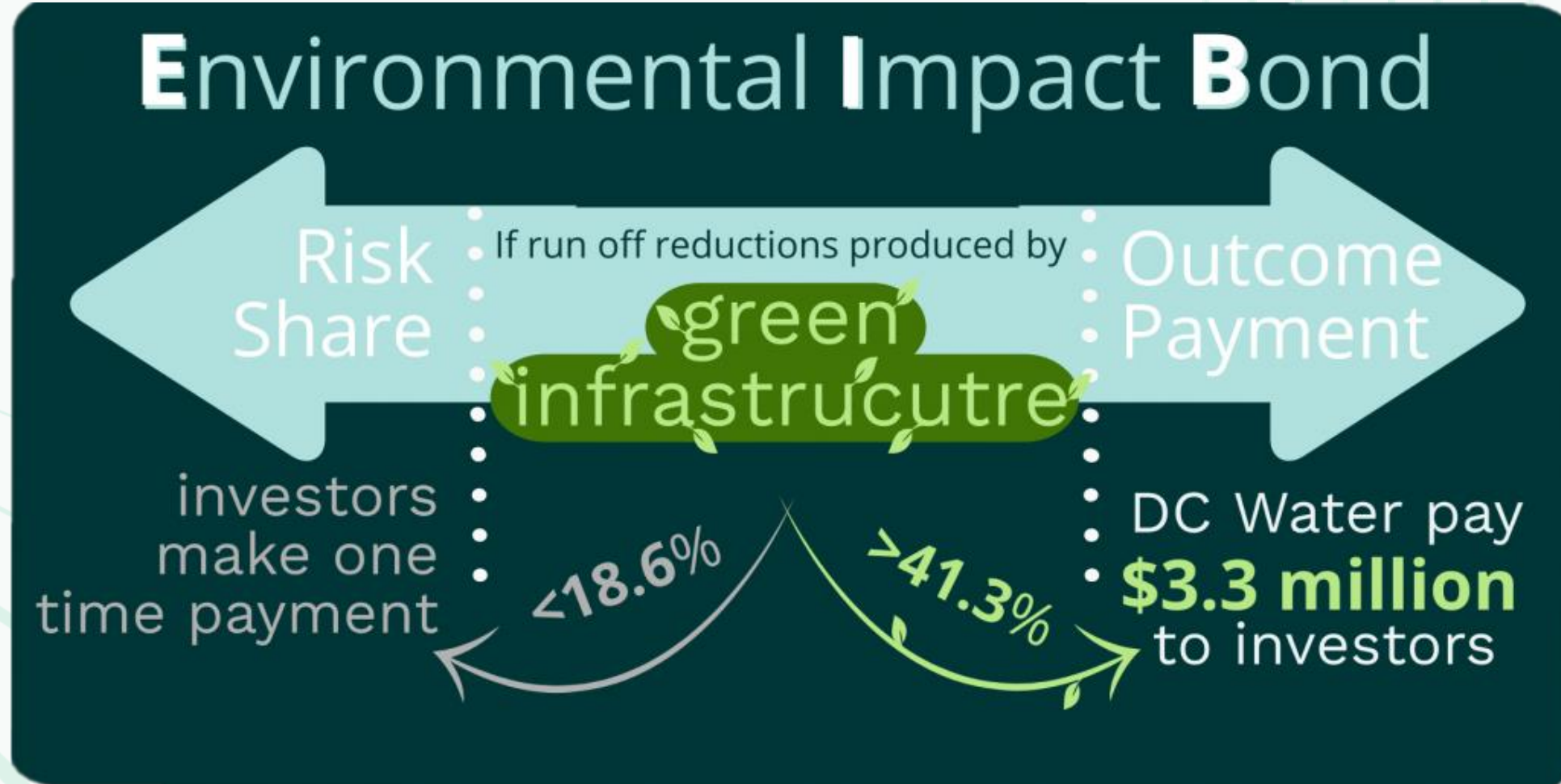
Nitrogen - 1 kg

Phosphorus - 1 kg

*N.B. These figures are modelled values based on available data. They represent our best estimate but results may vary locally.*

# Generating green investment at scale

# Cleaner Rivers in Washington DC – DC Water's EIB





# Plenty of finance beyond philanthropy and public funds

## “Impact Investing”

Industry experts estimate that global capital allocated to ventures of “measured” impact amounts to approximately £0.5 trillion, and of “intended” impact, a further £1.0 trillion\*.

- About 40%, or £600 billion, of global impact investing capital is said to be earmarked for investment in sectors that fall within the scope of ecosystem services and landscape recovery.

Impact investing offers a ready fit for funding landscape and ecosystem recovery ventures:

- It accommodates small deal sizes: £2-6m in the private and £20-30m in the public markets.
- It has wide experience of investing in agriculture and forestry, with most investors having made allocations to these sectors and planning to continue to do so.
- It is an established capability in the UK, with approximately 10% of impact investor institutions headquartered here. So about £50 billion of deals are managed from the UK.

BUT.....

“ Financing is how you meet the upfront costs of building the infrastructure, funding is how you pay for it over its lifecycle ”

Institute for Government, *Financing Infrastructure*

## **Who will provide the funding to encourage finance?**

- Water companies
- Food companies
- Flood risk management authorities
- Housing developers

## **What do funders want?**

- Confidence in what they are buying!



# Giving funders confidence

## What do they want?

- Quantified, trusted, verifiable outcomes
- Cost-effectiveness
- Clear risk management

## Investment Framework for High integrity environmental markets



# Catchment Markets

# Catchment Markets – green recovery demonstration projects

- Three pilots due to launch in late Spring 2022
  - Somerset Levels and Moors (Phosphorus)
  - Bristol Avon (Carbon, Phosphorus, NFM and Biodiversity Credits)
  - Solent (Nitrogen and Biodiversity Credits)
- Extensive Governance and Legal Agreements
- Robust Project Accreditation and Credit Registration
  - Backed by commitment to future long-term monitoring and market balancing
- Separation of Deals for Projects from Deals for Credits
  - Enables Stacking and generation of funds for more ambitious, multi benefit projects



# Market rules and governance – key to creating confidence to trade

## Market Governance

**Trust in the Market depends on clear rules and procedures, with independent oversight.**

### Market Rules

The Market Rules have been developed and supported by the Steering Group and their legal advisors. They are currently being considering by the Somerset Local Planning Authorities who must decide on the validity of the credits in their role as Competent Authority under the Habitats Regulations.

Finalisation and publication will occur at least four weeks prior to the launch of the first market round for permanent projects and credits. The Market Rules will cover the following components:

#### Participant Registration

How to participate in the Catchment Market and the requirements for registration.

#### Project Accreditation

How Nature-based Projects will be accredited for the Environmental Services they deliver, and the standards that will apply to accreditation.

#### Market Bidding (Supplier)

How to offer to supply a Nature-based Project.

#### Market Processes

How Market Rounds will be run, prices determined, and the standard conditions for Market Agreements.

#### Project Registration

How to propose and register a Nature-based Project and the Baseline Data and Project Data required for registration.

#### Credit Registration

How Environmental Credits will be registered and the requirements for registration.

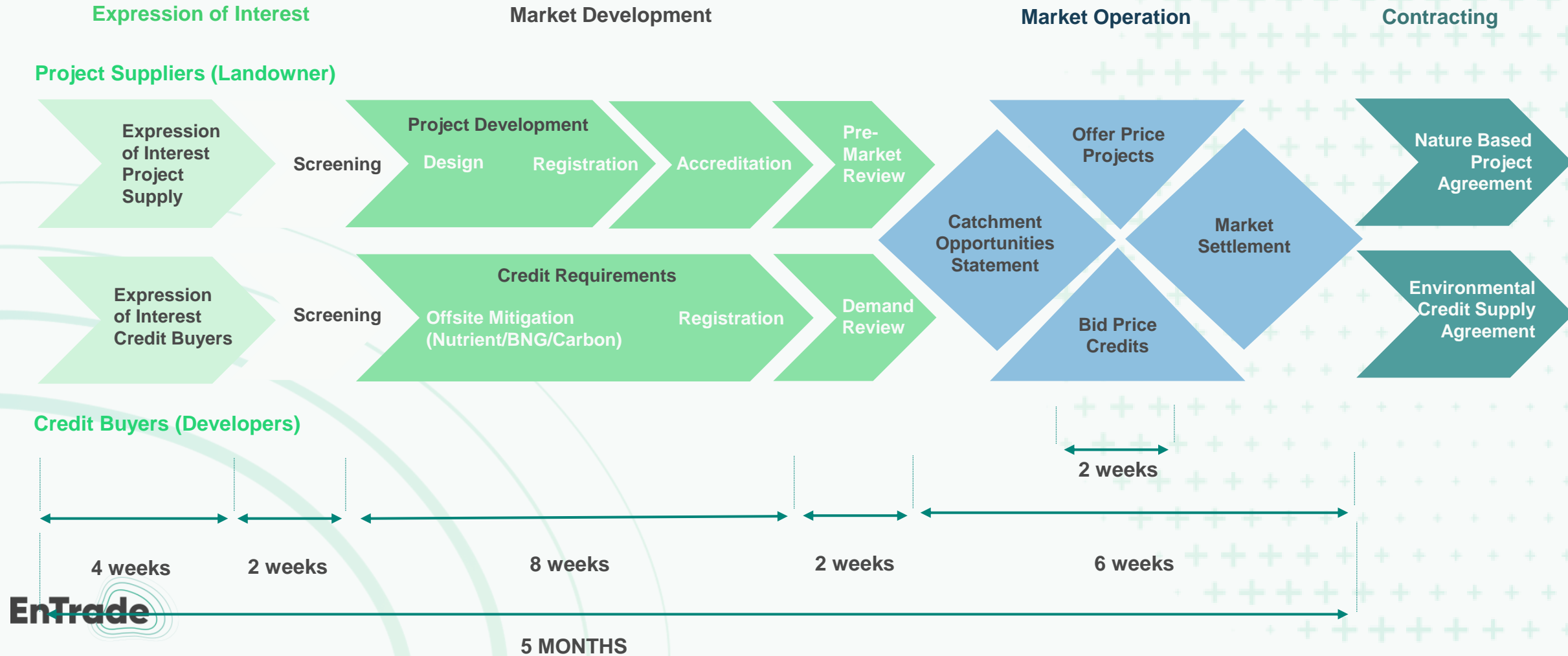
#### Market Bidding (Buyer)

How to bid to buy Environmental Credits.

#### Credit Issue And Transfer

How Environmental Credits will be issued, transferred and redeemed to meet planning, permit and licence conditions.

# Catchment Market Processes



The EnTrade logo features the word "EnTrade" in a bold, sans-serif font. The "E" is a dark teal color, while "nTrade" is white. The logo is set against a background of three concentric, hand-drawn style white circles.

**EnTrade**

**Thank you**

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