

FINANCING UK NATURE RECOVERY

STACKING & BUNDLING

BACKGROUND PAPER

April 2021



This short Background Paper has been prepared for participants in the *Financing UK Nature Recovery: Stacking and Bundling Workshop* to be held on 22nd April 2021.

The *Workshop* is the first in a series which aim to draw on the knowledge and practical experience of participants to help identify how the UK can take action in 2021 to put the recovery of nature onto a sustainable financial footing.

The *Financing UK Nature Recovery* initiative brings together a coalition of organisations that recognise that current spending is not reversing nature's decline. The coalition believes that the scale of the challenge, combined with the impact of Covid-19, means that there is an urgent need to look at how public funding can be most efficiently deployed, including to catalyse private investment in nature's recovery.

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FINANCING NATURE RECOVERY

Governments across the UK invest substantial funding in sustainable land use and management, particularly through agri-environment schemes and support for voluntary conservation organisations and initiatives. However, the urgency of reversing nature's decline and the scale of the challenge is beyond the resources that will be available from government and philanthropic sources alone.

Nature recovery requires land use change at scale¹, which requires several objectives to be balanced:

- Achieving the maximum environmental outcome² from all sources of finance, including taxpayer and private sources.
- Enabling adequate income to be available to make good business sense for landholders in the right locations to invest in environmental outcomes.
- Ensuring that practical tools and information are readily available to land managers and investors to enable them to plan and act with confidence.

There is significant private sector interest in the potential of well-designed markets for nature, and a range of sources of private funding for nature are potentially available to support nature recovery. Private funding can be secured against revenues generated or cost savings delivered by nature-based projects. Landholders require on-going revenue streams that provide an adequate return for new land uses that optimise environmental outcomes.

To maximise the impact of public and private investment in nature, there is a need for agreed standards for measuring and accrediting environmental services from nature-based projects. There is also a need for better coordination, governance, and improved access to environmental information. These issues will be the subject of further workshops.

¹ Delivery at landscape scale may be achieved by projects of different types and sizes, on single or multiple land holdings, that together deliver the required environmental outcome(s).

² Measurement of environmental outcomes may be on a per pound spent, per hectare restored and/or in relation to landscape scale nature recovery targets.

STACKING AND BUNDLING

'Stacking' and 'bundling' are mechanisms for packaging and selling environmental services from nature. The terms describe whether and how different environmental services can be sold separately from the same piece of land, or sold as a single product reflecting more than one service.

Principles about how environmental services from nature-based solutions can be 'stacked or bundled' are needed to inform both government rules and guidelines about whether and how public and private funding can be deployed on the same land. They are also needed for the design of market mechanisms such as regional aggregation brokers, habitat banks and catchment markets.

Current uncertainty around rules for stacking and bundling is creating practical problems for landholders and organisations looking to fund nature-based solutions and is resulting in delays to action on the ground. It is also a practical problem for the design of new programmes and regulations that interact or have the potential to interact on the ground.

WORKSHOP PURPOSE

The purpose of the workshop is:

to explore the issues that need to be considered in developing practical rules for rules stacking and bundling, and the principles and guidance that are needed to inform the design of regulation, incentive schemes and market mechanisms.

This Background Paper aims to provide context for the discussion, including an overview of some of the issues. It includes a draft set of design principles that may be a helpful thought starter, and case studies that will be used to facilitate workshop discussions. It also includes a short set of working definitions and references.

CONTEXT

The need to invest in the recovery of nature in the UK and the benefits of doing so are generally accepted. The multiple benefits of investing in nature-based solutions are also broadly recognised.

The public value delivered by landholders who carry out nature-based projects on their land has been acknowledged in the principle of 'public money for public goods'. Investment in nature-based projects also delivers private benefits to businesses, including enabling them to internalise the environmental costs of their activities (eg carbon) voluntarily or in response to regulation.

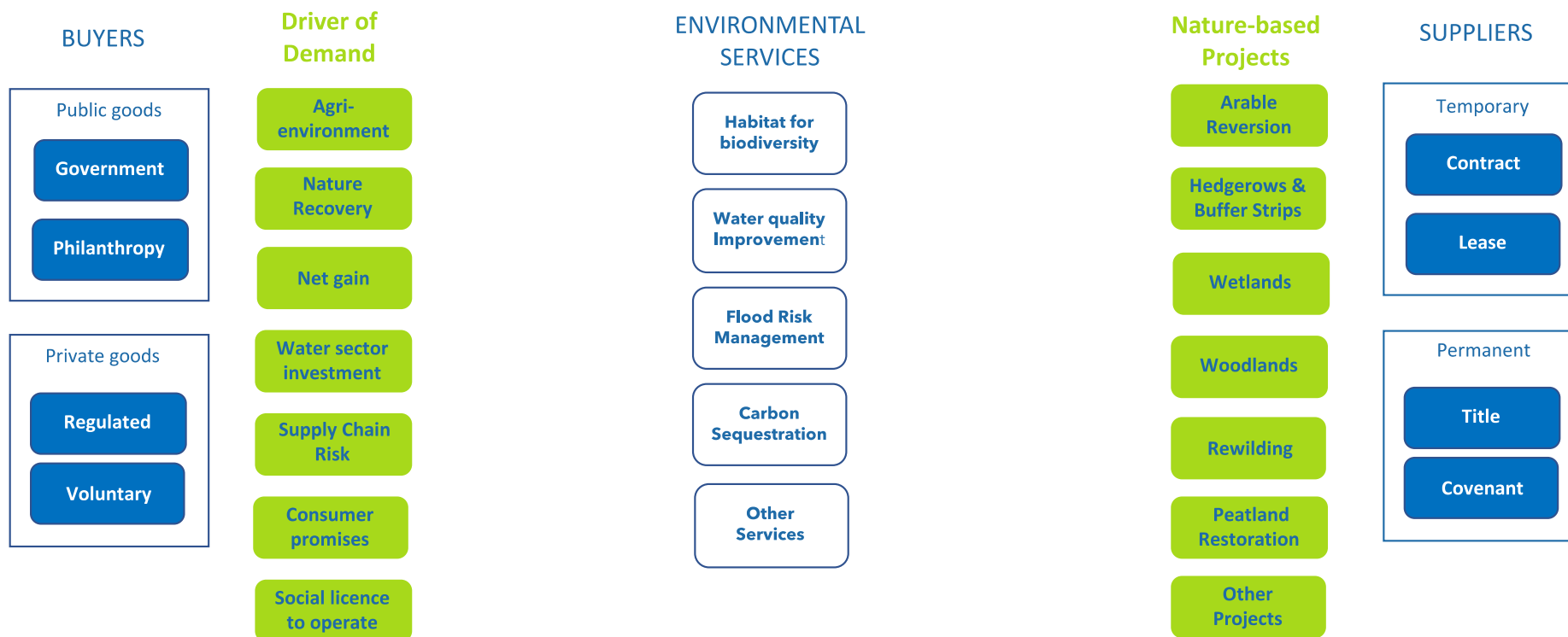
Although there are not yet metrics and accreditation standards for all of the environmental services delivered by nature-based projects, significant progress is being made. This includes biodiversity net gain, water quality improvement, flood risk management and nature-based carbon sequestration.

As mechanisms for packaging environmental services from nature-based projects, stacking and bundling can help bring buyers and sellers of these services together.³

A summary of the current UK delivery landscape for investment in environmental services is illustrated in Figure 1.

³ Buyers and sellers may be brought together in ways that do not involve stacking or bundling.

Figure 1 - Delivery Landscapes



INCENTIVISING LAND USE CHANGE

Paying landholders an economic price⁴ for the environmental services they deliver is important to motivate them to create and sell the services. It also recognises the true value of nature and rewards its recovery. Paying an efficient price for these services is important to ensure that both taxpayers and private investors are getting value for money and ensure that the funding available achieves the maximum environmental outcome.

Establishing the economic price raises practical questions about what is being bought and sold, how environmental services should be packaged and paid for, and the role of markets in price setting.

Defining stacking and bundling and offering guidance on how the approaches can be used, can help maximise investment in nature-based projects while mediating and managing the risk of trade-offs between environmental outcomes.

⁴ An economic price (or 'whole price') includes the expenses associated with the purchase. It comprises direct and indirect costs associated with the transaction and may also include the buyer and seller's opportunity costs.

SOME WORKING DEFINITIONS

Over 400 different concepts and terms have been identified in policies, standards and market mechanisms involving nature-based solutions, net gain and stacking and bundling. This complexity can make discussion challenging. To facilitate discussion at the workshop, some working definitions for a small number of key terms that are used throughout this paper are set out below.

Bundling means packaging the biodiversity and environmental services produced by a nature-based project on a single area of land, and selling the package (typically as a single unit of trade or credit) to a single buyer.

Credit means a market instrument that represents the property rights to the accredited environmental service(s) delivered by a nature-based project.

Environmental services means the habitat for biodiversity, water quality improvement, flood management, carbon sequestration and other outcomes delivered by Nature-based projects.

Nature-based project means a habitat creation, restoration or improvement project, which results in a change in land use that delivers environmental services.

Nature-based solution means actions to protect, sustainably manage, and restore natural and modified ecosystems to address societal challenges.

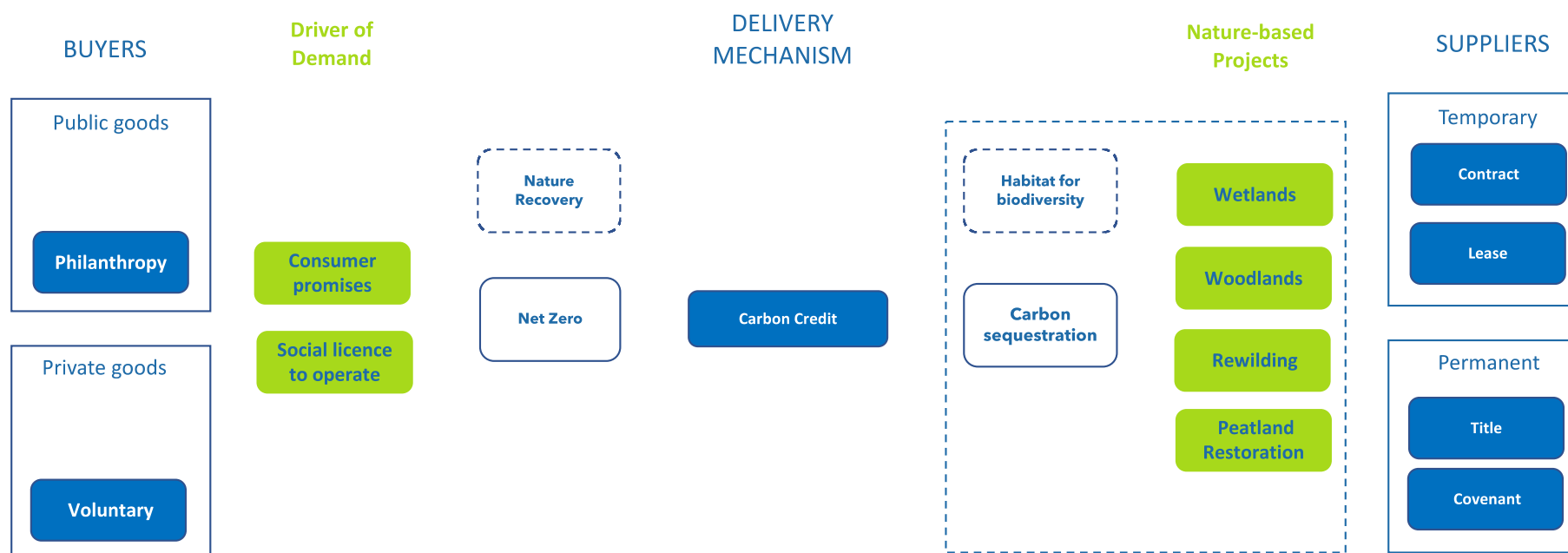
Stacking means measuring and accrediting the different types of environmental services from a nature-based project on a single area of land, and selling the services to different buyers, or receiving multiple payments from a single buyer for each service delivered.

STACKING AND BUNDLING: SOME KEY DIFFERENCES

Some of the key differences between stacking and bundling are illustrated using the examples in Figure 2, Figure 3 and Figure 4 below.

BASIC BUNDLING EXAMPLE

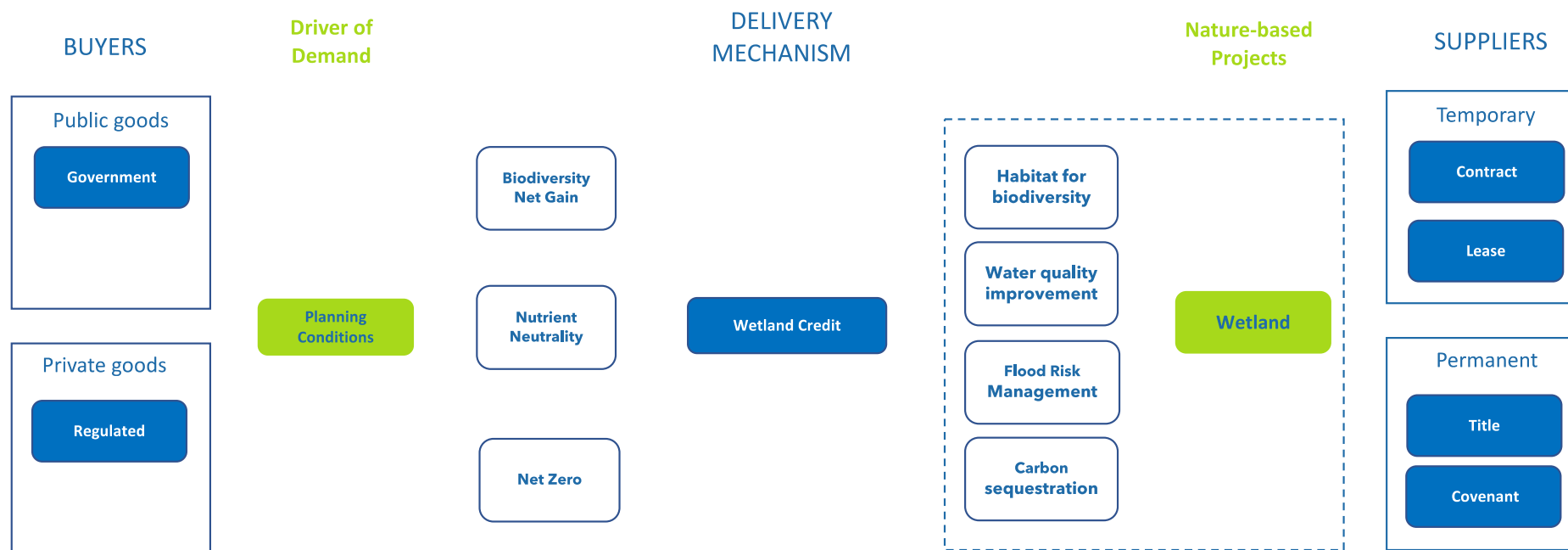
Figure 2 - Basic Bundling Example - Enhanced Carbon Credit



In this example, the carbon sequestration from a nature-based project is calculated using accreditation methodologies such as the Woodland Carbon Code. Evidence of the nature recovery benefits that are 'bundled' with the carbon sequestration are provided to voluntary buyers of carbon credits, who may be willing to pay a higher price for the enhanced credit.

EXTENDED BUNDLING EXAMPLE

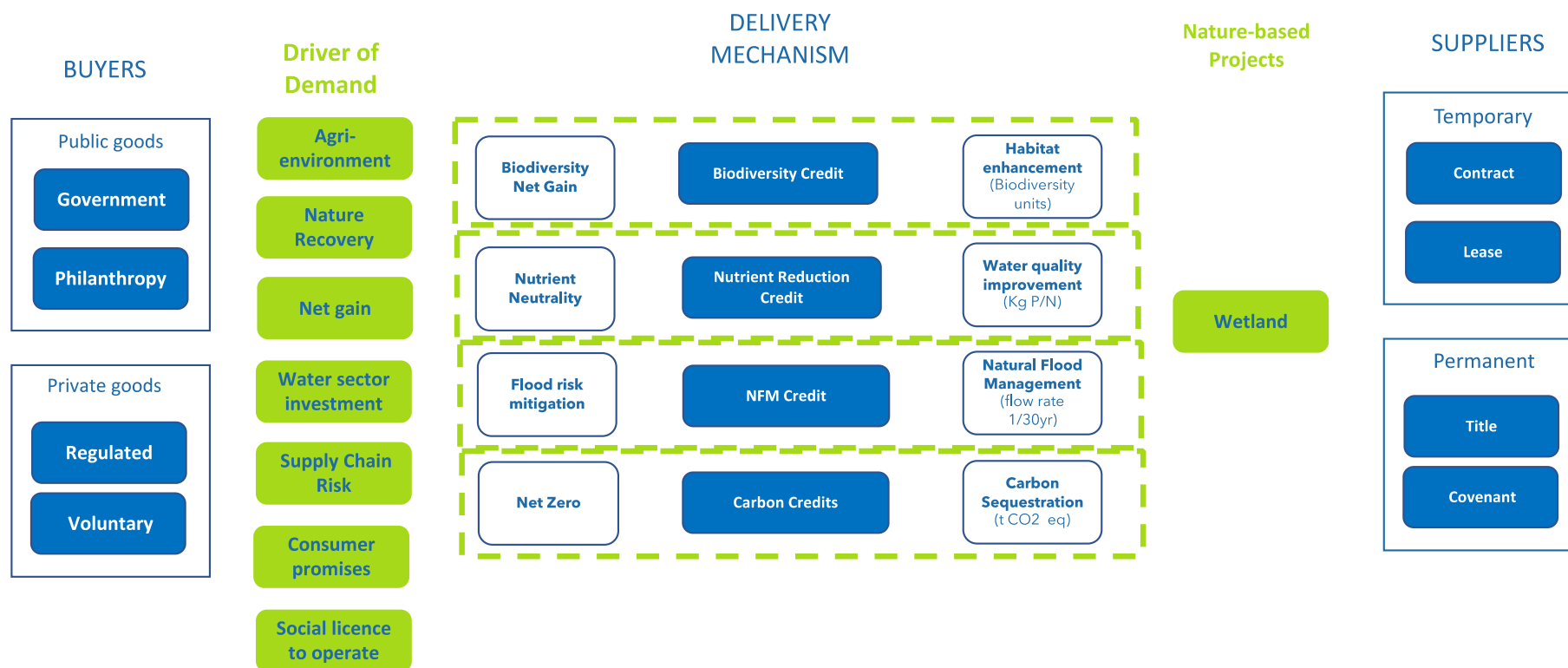
Figure 3 - Extended Bundling Example - Wetland Credit



In this example, the biodiversity, water quality, flood risk management and carbon sequestration benefits from a wetland creation project are bundled together in a single credit and offered for sale to a single buyer who has a need for one or more of the environmental services delivered by the wetland.

STACKING EXAMPLE

Figure 4 - Example of Stacking - Environmental Service Credits



In this example, the biodiversity, water quality, flood risk management and carbon sequestration benefits from the same wetland are individually accredited using approved methodologies and sold separately to different buyers to meet a range of policy, regulatory or voluntary needs of the different buyers.

STACKING AND BUNDLING: ADVANTAGES AND DISADVANTAGES

There are advantages and disadvantages of using stacking and/or bundling to package environmental services from nature-based projects for sale. Table 1 below summarises these advantages and disadvantages, drawing on the literature on the theory and practice from around the world, along with current UK experience. It also includes a comparison of the advantages and disadvantages of using neither.

Table 1 - Stacking & Bundling Advantages and Disadvantage

	ADVANTAGES	DISADVANTAGES
Stacking	<ul style="list-style-type: none"> • Provides transparency for what is being bought and sold and can facilitate symmetrical accounting • Facilitates additional income from more than one source on same parcel of land for landowners, helping meet opportunity costs • In context of clear additionality requirements, can encourage good measurement of environmental outcomes. 	<ul style="list-style-type: none"> • Risk of lack of additionality/double dipping if environmental services are overlapping. • If used with offsetting, can expose regulatory failure arising from incomplete and asymmetrical accounting. • Higher transaction costs in the absence of agreed standards and processes for accrediting environmental services.
Bundling	<ul style="list-style-type: none"> • Facilitates additional income from a single transaction, helping meet opportunity costs. • Lower transaction costs. 	<ul style="list-style-type: none"> • Risk of uncertainty/lack of transparency of the environmental services that are being bought and sold. • Risk of lack of additionality if a bundled credit is sold concurrently with credits for individual environmental services from the same land. • Challenge finding buyers willing to pay an economic price for bundled services.
Neither	<ul style="list-style-type: none"> • Reduces risks associated with additionality • Simplicity: removes complexity of S&B • Payments from a single scheme may be sufficient incentive to secure environmental outcomes 	<ul style="list-style-type: none"> • Risk of failure to properly value the services provided by nature. • Risk of low environmental value projects on lowest value land. • Risk of failure to achieve landscape scale solutions. • Payments for individual services on one piece of land may not be adequate incentive to sellers • Risk of limiting innovation and development of market mechanisms.

The design of a range of regulations, incentive schemes and market mechanisms across the UK, including the examples in Appendix 1 will need to establish clear rules around stacking and bundling to provide certainty to landholders, investors and buyers of environmental services.

KEY ISSUES

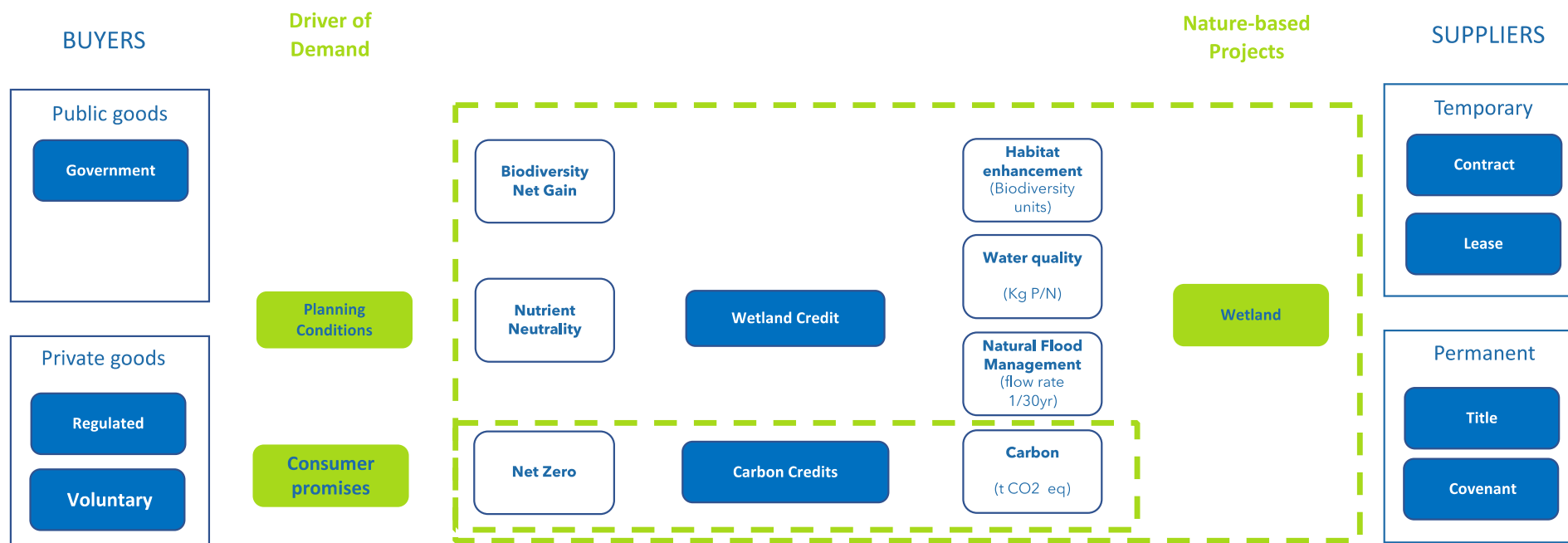
The development of stacking and bundling rules involve policy choices. A range of issues need to inform these policy choices, including include additionality, accreditation standards, governance and capacity building, monitoring and verification. Particular issues need to be considered where offsetting is involved. The outcome of these policy choices will influence the rate and scale of private investment in nature recovery.

ADDITIONALITY

A key issue is ensuring that payments for stacked or bundled environmental services are 'additional', which in simple terms means that the payment results in the delivery of a service(s) that would not otherwise have been provided.

One example of a failure of additionality is shown for the wetland example in Figure 5 below.

Figure 5 - Additionality failure - mixed currency



In this example, two different types of credit for the environmental services can be created:

- a wetland credit which covers all of the environmental services delivered by the wetland including its carbon sequestration
- a carbon credit which accredits only the carbon sequestration from the wetland.

Either type of credit can be sold individually without causing an additionality problem. However, if both types of credit are sold from the same land, there is an additionality problem. The carbon storage benefits would have been sold twice without delivering any additional sequestration.

The issues at the core of additionality are trust, confidence and certainty in the environmental outcomes delivered by nature-based projects. There are a range of potential tests for additionality (see Table 1).

Table 2 - Potential tests for additionality (adapted from EPRI 2012)

TEST	BASIS FOR DETERMINING ADDITIONALITY
Project In, Project Out	Does the nature-based project deliver environmental service(s) that would not be delivered if the project is not implemented? If so it is in principle additional (although may be subject to one or more further tests).
Legal and Regulatory	Does the nature-based project deliver an environmental service(s) required by law and regulation? If so that service is not additional unless allowed by policy as an efficient and effective way of achieving compliance, and/or enforcement is practically unachievable. (Other environmental services delivered by the project may be additional).
Standard industry practice	Does the nature-based project involve practices that are accepted by industry as standard? If so environmental services delivered may not be additional (unless there is an active policy to facilitate transition to that industry standard).
Investment Test	If the nature-based project is in receipt of public funding, would the project be economically viable without additional revenue from selling environmental services from the project? If not these services may be additional.
Barrier Test	Are there significant barriers to implementing the nature-based project that require revenue from the sale of environmental services to overcome those barriers? If so the services may be additional.
Timing Test	Was the nature-based project initiated after the date that a specific scheme or regulation or incentives commenced? If not the project may not be additional (unless there is a positive policy to generate a pipeline of projects in advance of the start date).
Performance benchmark	Does the nature-based project deliver an environment service(s) above a pre-determined benchmark(s)? If so it may be additional to the extent that it exceeds these benchmarks.

Policy choices related to additionality include which test(s) should be used and in what situations, who bears the onus of demonstrating additionality (or the absence of additionality), and to what standard.

ACCREDITATION STANDARDS

Well-designed metrics for accrediting different environmental services help reduce additionality issues by making transparent what is being bought and sold and avoiding overlapping services.

While having different standards is not uncommon in the early stages of new market development, having multiple standards for the same environmental service significantly increases additionality risks. Agreeing which standards are required and developing a common set that can be applied consistently will significantly reduce this risk.

Mechanisms are also required that ensure that standards based on the best available science and are regularly reviewed and updated through a transparent process that takes into account improvements in data and scientific knowledge.

Policy choices related to accreditation standards include determining the scope of the standards required, the processes by which standards are set and reviewed, how scientific uncertainty should be addressed, and how to ensure consistent administration.

CAPACITY AND GOVERNANCE

Significant work is being undertaken by both the public and private sector to develop the tools and governance mechanisms to facilitate trading in environmental services from nature. These tools and mechanisms need to be demonstrated at scale to help build trust and confidence.

Capacity building is needed to ensure that well designed schemes are also well administered. Local authorities and advisers to landowners have a particularly important role to play in ensuring nature-based projects are delivering the expected environmental outcomes on the ground.

There is also a need for coordination between government bodies or oversight, including monitoring, evaluation and enforcement.

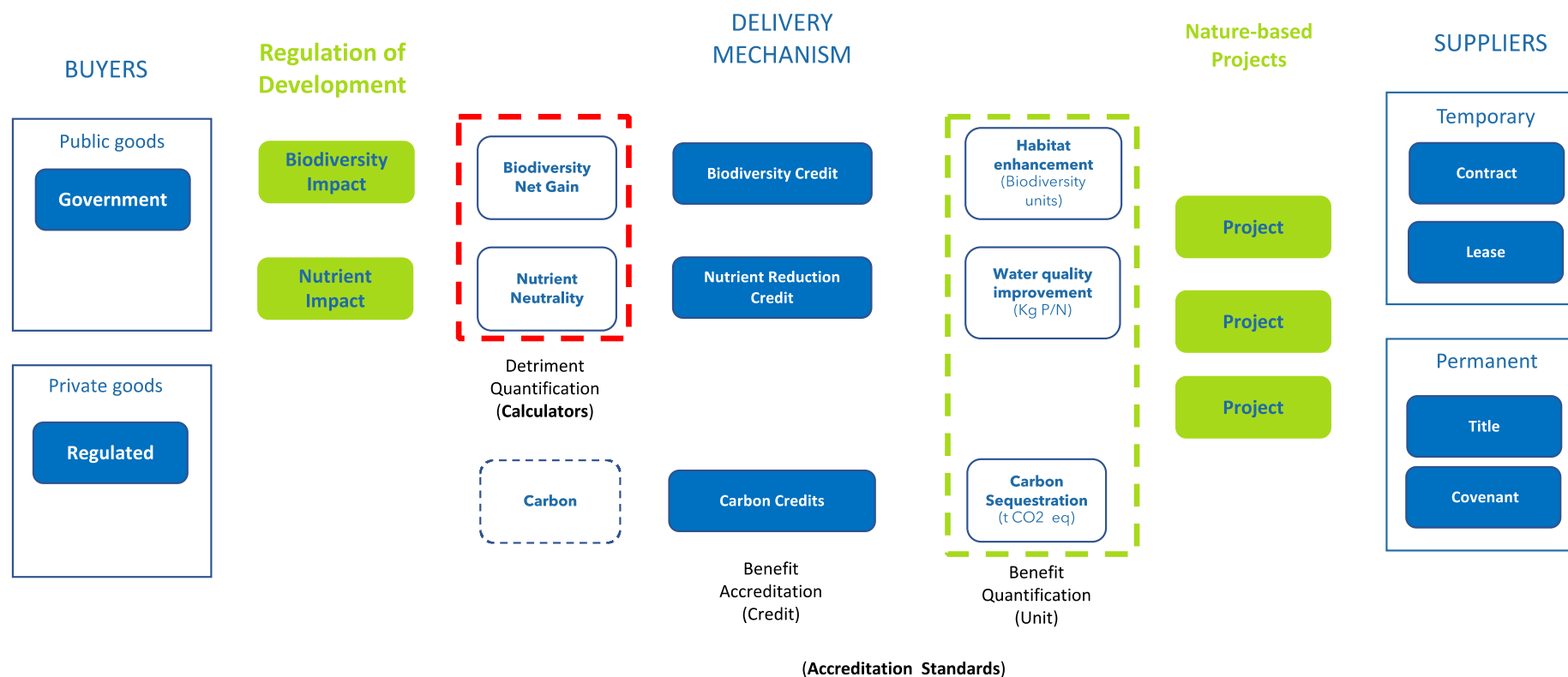
Policy choices related to capacity and governance include how to create the space to facilitate demonstration at scale, enable learning by doing and manage risk by limiting the impact of failure.

OFFSETTING AND ASYMMETRICAL ACCOUNTING

Particular issues for stacking and bunding can arise when nature-based projects are contributing to offsetting the impacts of development eg biodiversity net gain and nutrient neutrality. A particular issue is asymmetrical accounting in which different accounting is applied to the impact site and the offset site.

If regulation does not require the full direct environmental impact of a development on a site to be accounted for, the offsets required will only partially mitigate or compensate for the impact. Regulatory failure of this kind is a function of the offset scheme design that will be more readily exposed by stacking. This is illustrated in Figure 6.

Figure 6 – Example of Asymmetrical Accounting



In this example, regulation requires a housing developer to offset the impacts on biodiversity of the development, and nutrients discharged from the on-going use of the houses. However, the regulation does not require the developer to quantify or offset any loss of carbon stored in vegetation and soil as a result of the development.

The landholders who deliver the nature-based project obtain credits for the habitat created, nutrient reduction and the carbon sequestration delivered. The developer buys the biodiversity and nutrient credits required. The landholders having supplied carbon sequestration sell the carbon credit to other buyers.⁵

A policy choice related to this offsetting example is whether the landholders should be allowed to or prevented from selling the carbon credits from their nature-based projects to other buyers, because they have sold the biodiversity and nutrient reduction credits to a developer.

⁵ Note, because the carbon loss on the development site is not measured, there is no means of telling whether the carbon sequestered by the nature-based project is greater or less than the carbon lost.

CASE STUDIES

The workshop will involve break-out sessions to help maximise participant engagement and input. Two hypothetical case studies have been prepared that will be used as a basis for activities in some of the break-out sessions.

The first case study will be used to facilitate discussion about the issues from the perspective of a single landholder.

The second case study will be used to facilitate discussion about the issues that arise for nature recovery at a landscape scale, involving multiple potential buyers and sellers of environmental services.

CASE STUDY 1: LANDHOLDER PERSPECTIVE

A farmer has seen an advert for a new round of woodland grants being offered by the 'Nature Agency'.

The scheme provides a payment for:

- the woodland establishment cost; and
- woodland maintenance for the first ten years

The scheme does not pay for:

- maintenance beyond the first ten years; or
- the use of the land.

The farmer has one site in mind on some rough grazing land.

On a visit by the local farm environmental advisor the farmer becomes aware that if woodland is planted on a second site it could act as an interceptor for phosphorus (P) from arable land entering a river that flows into a protected Ramsar wetland site.

The landowner is fully compliant with farming regulations and the P losses are from P in the soil accumulated from past permitted fertiliser practice. To ensure permanence, the farmer would be willing to place a covenant on the woodland.

The farmer decides to have the potential woodland project accredited for its nutrient reduction on the second site. The farmer's accountant shows that with the agri-environment grant and payments for the nutrient credits sold through a nutrient credit trading broker approved by the Local Planning Authority, the farmer can earn a modest income (@ 1.5% p.a) for the on-going use of the land as woodland.

CASE STUDY 2: NATURE RECOVERY AT A LANDSCAPE SCALE

A nature recovery strategy has been developed for a local authority area. A key catchment has been identified as the highest priority for investment.

The upper part of the catchment has low population density and is mostly used for grazing. It includes peatland, significant areas of which are degraded.

The middle section is mostly high value farmland with both arable, dairy and beef cattle farming. There is very sparse woodland cover across the area, although a programme of hedgerow and habitat planting has helped stabilize the decline in farmland birds. Increasing woodland cover is a key strategy of the climate adaptation strategy.

One area in the middle section of the catchment has been earmarked for housing development in the local planning scheme due to its proximity to a motorway that crosses the area. The development is subject to a nutrient neutrality policy to protect internationally important wetland sites in the lower catchment which are in moderate condition.

The lower catchment includes a town in which 700 houses are subject to 1 in 30-year floods.

There is a series of potential buyers for environmental services in the catchment.

BUYERS

BUYER 1: 'TRUST FOR NATURE'

The Government has provided the Trust for Nature with funding for woodland creation and peatland restoration on private land in the catchment. The funding covers the capital cost and ten years of maintenance but will provide no on-going source of income for landholders. The land value in priority areas of the middle catchment in particular, is a major barrier to creating the woodland corridors across the area which have been identified as critical in the climate adaptation strategy. The amount of funding for peatland recovery will only restore a small percentage of the degraded areas.

BUYER 2: HOUSING DEVELOPER

The largest housing developer in the catchment needs to obtain offsite phosphorus mitigation under the nutrient neutrality policy. The LPA has appointed a nutrient credit broker to supply the credits from nature-based projects in the middle catchment. The credits deliver permanent reductions in nutrient run off from farmland.

BUYER 3: MOTORWAY CONTRACTOR

Needs Biodiversity Units to meet planning condition for removal of woodland for motorway widening. The Contractor also needs to offset loss of wetland habitat (including impacts on some great crested newt populations) but cannot do so within the footprint of the construction project.

BUYER 4: REGIONAL AIRPORT

Wants carbon credits to meet its voluntary policy commitment to net zero. Is committed to sourcing credits locally wherever possible with priority given to carbon credits from nature-based projects.

BUYER 5: NATURE AGENCY

Wants to secure habitat for newts to support its district licensing scheme.

BUYER 6: WATER COMPANY

Needs to secure nutrient reduction credits for nitrogen as part of its obligations under the water sector environment programme, and carbon credits to meet its commitment to achieve net zero by 2030. The water company has no substantial landholdings of its own.

BUYER 7: FLOOD COMMITTEE

The regional Flood Committee has been funded by the Government to explore how nature-based solutions may reduce the surface flow rates during 1 in 30-year flood events. Modelling has shown that the area of nature-based projects needed to slow the flow enough to make a material difference to the flood risk will require the Committee to leverage the government funding.

POTENTIAL SELLERS

SELLER 1: ESTATE OWNER

A large rural landholder whose estate includes contiguous areas of the middle and upper catchment has been approached by a local conservation group with a re-wilding plan. The peatland on the estate is in very good condition. Other upland areas of the estate are used for low intensity grazing. Land in the middle catchment is used for highly productive dairy and cereals.

SELLER 2: WILDLIFE TRUST

The Trust been bequeathed a large farm in the middle part of the catchment located between two large existing wetlands that it manages on behalf of the local council. The Trust wants to create some new wetland habitat on the land to improve connectivity of the existing wetland habitat and to secure an on-going source of funding to maintain the property.

SELLER 3: ARABLE FARMERS

A number of arable farmers close to the motorway project and new housing development have progressively reduced the size of their land holdings, making the economic viability of their farms increasingly marginal. Without additional sources of income, changes to farm payments are likely to put additional pressure on farm viability.

SELLER 4: MINERAL PRODUCTS BUSINESS

A mineral company which has been extracting gravel from a floodplain on the boundary of the lower and middle catchment for the past 35 years is coming to the end of its licence. The licence conditions require only basic rehabilitation of the gravel pits prior to the transfer of the land to the local authority. The landholding includes significant areas of land which have not been used for gravel extraction.

DRAFT OBJECTIVES AND DESIGN PRINCIPLES

Some draft objectives and principles for stacking and bundling have also been prepared as a starting point for discussion to help inform market and programme design and policy guidance.

OBJECTIVES

A balance between three related objectives is required:

- Achieving maximum environmental outcome from all sources of finance, including taxpayer and private sources.
- Enabling adequate income to be available to make good business sense for landholders to invest in environmental outcomes.
- Ensuring that practical tools and information are readily available to land managers and investors to enable them to plan and act with confidence.

DESIGN PRINCIPLES

- **Effective:** address the right issues (ie reconcile the three objectives) and provide solutions
- **Efficient:** work optimally – best outcome/cost return, manageable transaction costs, feasible processes to follow
- **Fair:** non-discriminatory, enable broad participation and distributional effects are OK
- **Transparent:** Basis for decisions clear; results accessible and open
- **Flexible:** provide users with options and are not prescriptive
- **Clear:** straightforward to understand and are unambiguous
- **Evidence-led:** based on sound ecological, economic and social/behavioural science, and to monitor and evaluate results.
- **Continuous improvement:** modified and adapted based on evidence, monitoring and evaluation.

APPENDIX 1

The tables below summarise some of the current and future regulations, incentive schemes and market mechanisms to which stacking and bundling rules apply or will need to apply.

CURRENT

	REGULATED/ VOLUNTARY /INCENTIVE	ENVIRONMENTAL SERVICE(S)	UNITS	DURATION	PROJECT SCALE/TYPE
Nutrient neutrality	Regulated	Reduction in nutrient inputs to protected sites.	kg Total N pa kg Total P pa	1 year - permanent	Mitigation Site(s)
Catchment markets	Voluntary market mechanism to deliver regulated and voluntary obligations.	Habitat creation Water quality improvement Natural flood management Carbon sequestration	Biodiversity Units Nutrient reduction Credits Flow Reduction (1/30 year) Carbon credits (t CO ₂ eq)	1 year - permanent	Catchment
Woodland Carbon Code	Voluntary	Carbon sequestration	Woodland Carbon Units	Up to 100 years with 30-35 years income	Project
Peatland Carbon Code	Voluntary	Carbon sequestration	Peatland Carbon Units	30 – 100 years	Project
Habitat Banks	Voluntary market mechanism to deliver regulated obligations.	Habitat creation: woodlands wildflower meadows wood meadows rewilded sites wetlands	Biodiversity Units	30 years	Site of habitat bank(s).
Regional aggregation broker	Voluntary market mechanism to deliver priorities agreed by the community.	Soil carbon Biodiversity Water quality.	Peatland Carbon Units Woodland Carbon Units Biodiversity Units	Short term funding (1-2) years	Landscape

FUTURE

	REGULATED/ VOLUNTARY /INCENTIVE	ENVIRONMENTAL SERVICE(S)	UNITS	DURATION	PROJECT SCALE/TYPE
Biodiversity Net Gain	Regulated	Habitat creation	Biodiversity Units	30 years	Net Gain Sites
ELM	Incentive	<p>3 types of scheme:</p> <p>Sustainable Farming Incentive – payment for actions linked to standards for features e.g. hedgerows & grasslands.</p> <p>Local Nature Recovery – pays for actions supporting local nature recovery & local enviro priorities.</p> <p>Landscape recovery - longer-term funding to restore landscape and ecosystem recovery</p>	TBD	Up to 30 years.	Project - landscape

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For further background about the Financing UK Nature Recovery initiative visit financingnaturerecovery.uk