THE LANDBANKING GROUP

Ecological Performance in Capital Markets

Rights formation, evidence, and the contractual allocation of incompletely recognised ecological value

Chesney Huskisson, October 2026

01 Purpose, scope, and governing principle

1.1 Purpose

This paper examines the conditions under which ecological performance can support an investable private asset and develops the Nature Stock Participation Certificate ("Nature Stock" or "Participation Certificate") as one proposed legal and financial architecture for doing so. Ecologically productive land, credible environmental measurement, and estimates of ecosystem-service value establish important elements of the underlying economic case, while an investable claim additionally requires a legal architecture through which capital can participate in that performance. The analysis proceeds from ecological productivity and missing markets, through rights-based asset formation and comparative legal precedent, into the authority required to constitute an ecological participation right; Section 05 then introduces the Nature Stock architecture, followed by its comparative asset character, valuation, evidentiary status, and investment implications.

The underlying problem is an asymmetry between ecological and financial systems, arising because ecosystems continuously generate functions and services on which economic activity depends, while capital markets allocate investment exposure through legally cognisable claims held by identifiable persons. Where the rights architecture connecting those systems is incomplete, ecological performance can remain economically material while remaining difficult to access directly as an investment exposure. Natural-capital accounting, environmental economics, property-rights theory, contract law, and existing environmental markets each address part of that problem and together provide the foundations for identifying the legal and economic conditions required for a long-duration ecological participation asset.

1.2 Scope and definitions

"Ecological Performance" denotes the actual condition, functioning, resilience, change, outputs, and outcomes of an ecological system, whether or not a particular characteristic has yet been measured or monetised. Within the Nature Stock architecture, that same ecological subject matter is delineated contractually by reference to the Issuance Boundary and any Excluded Scope; these qualifications determine the scope of the Holder's entitlement without changing the underlying concept. The concept is broader than any single environmental commodity or metric and can encompass carbon-related performance, biodiversity condition, habitat quality, hydrological function, soil condition, and other biophysical states or changes where the applicable scientific and legal conditions are satisfied. Measurement is analytically separate from the performance measured, while a transaction-layer claim is separate again from both the ecological state and the

evidence describing it. This paper therefore treats the physical substrate, ecological performance, evidentiary outputs, legal participation rights, and later commercial claims as distinct objects requiring distinct forms of analysis.

The term "asset" is used with corresponding care because environmental accounting, financial reporting, finance, and property law apply it to different objects. SEEA Ecosystem Accounting treats spatial ecosystem units as ecosystem assets because they constitute ecological stocks capable of generating future ecosystem-service flows, whereas private financial analysis asks which legally controlled right belongs to a particular holder and can produce economic benefits for that holder.[1] The term "investable asset" is used here in that rights-based economic sense. Section 06 considers the indicative accounting treatment of the proposed Nature Stock and selected nature-market instruments under IFRS Accounting Standards, while recognising that the classification of any actual issuance depends on its definitive terms and the applicable accounting facts and circumstances.

The paper focuses on the legal and economic architecture through which ecological performance can become investable. Ecosystem-service valuation, welfare valuation, natural-capital accounting, and ecological measurement provide information about ecological productivity and economic significance, while the private value of a participation right depends on the benefits lawfully available to its holder. Wider ecological value can accrue to persons with no relationship to the instrument and can remain economically material even where no private capture mechanism exists. Sections 02 and 07 maintain the resulting distinction between ecosystem value and private claim value throughout the analysis.

Capitalised terms used in the Nature Stock analysis whose operative meaning derives from Nature Stock Participation Certificate[1] are set out in Appendix A.

1.3 Governing principle

The governing principle is that ecological productivity, observability, legal entitlement, and financial value are separate analytical stages, each of which must be established on its own terms. Ecological productivity concerns the functions and outcomes generated by the underlying system; measurement concerns the evidence available to observe that performance; law determines which persons can allocate, constrain, transfer, or participate in claims referencing it; and finance determines the value of the resulting legal position under uncertainty. These stages remain

[1] Internal draft v3.2.5.

interdependent, since more precise measurement leaves missing legal authority unresolved and contractual drafting remains bounded by the rights available under applicable law.

1.4 Evidentiary conventions

The paper distinguishes propositions established in the relevant economic, legal, or environmental literature from those demonstrated by existing legal or market practice, and separates the inferences drawn from those sources from the elements of the Nature Stock architecture proposed in response. Adjacent environmental markets establish the availability of particular legal techniques within their own scope, while their extension to a broader ecological-performance right depends upon the law governing the relevant ecological domain. Carbon-rights legislation, for example, demonstrates that environmental economic benefits can be separated from underlying land ownership; the broader inference drawn here is correspondingly limited to what the comparative evidence supports.

The evidentiary discipline extends to valuation and accounting. Contingent contractual rights can possess present economic value, natural assets can generate future service flows, and market value can differ from holder-specific investment value, while the issue price of a Nature Stock and the probability of a particular downstream nature market developing remain empirical or judgemental questions. Section 06 applies the same approach to accounting, where classification follows from the substantive rights and obligations of the actual instrument and the holder's accounting circumstances. Conclusions throughout the paper are therefore confined to the level of support available for the proposition being advanced.

02 Ecological performance and the institutional conditions of investability

2.1 The underlying stock-flow system

Natural-capital theory represents ecosystems through a stock-flow relationship in which ecological assets possess extent and condition, and those stocks generate flows of ecosystem services. The SEEA Ecosystem Accounting framework formalises this relationship by distinguishing ecosystem extent, ecosystem condition, physical ecosystem-service flows, monetary ecosystem-service flows, and monetary ecosystem asset accounts, while recognising that the capacity of an ecosystem to sustain future services depends upon the state of the underlying ecological stock.[1] An ecosystem can therefore be economically productive without producing a conventional cash receipt, because part of its economic contribution can arise through benefits or avoided costs realised elsewhere in the economy. The stock-flow framework establishes ecological productivity as an economic proposition while leaving the allocation of private claims over that productivity unresolved.

The spatial character of ecosystem-service flows complicates conventional asset boundaries because the location of ecological production, economic benefit, and management control can differ materially. A forest can regulate water used downstream, a wetland can attenuate flooding outside its cadastral boundary, pollinator habitat can support production on neighbouring farms, and ecological degradation in one part of a landscape can alter resilience elsewhere, so the economic beneficiary and the person controlling the productive ecological stock need not coincide. The location of ecosystem assets and beneficiaries is accordingly part of the economic analysis, and value can be distributed across a network of beneficiaries while management decisions affecting the underlying ecological stock remain concentrated in a smaller set of landholders, managers, concessionaires, communities, or public authorities.[1]

2.2 Ecological value, exchange value, and private claim value

Ecosystem-service valuation produces several concepts of value, and the distinction among them is directly relevant to the formation of a private nature-referenced asset. Environmental economics commonly employs welfare concepts including willingness to pay, consumer surplus, avoided damages, and other measures directed at changes in social welfare, while national-accounting frameworks such as SEEA seek values conceptually consistent with exchange transactions and the System of National Accounts. Where ecosystem services are untraded or supplied as public goods, welfare value can exceed the exchange value available through a feasible transaction and can accrue to beneficiaries from whom the provider has no legal or practical mechanism to collect payment. An

estimate that a watershed produces substantial flood-protection value accordingly establishes economic significance, while a private receivable arises only where a legal and transactional mechanism allocates that benefit to the relevant claimant.[2]

Private claim value is the value of the defined legal position through which a holder may receive specified monetary or non-monetary benefits. A contractual right capable of receiving a proportion of future nature-market proceeds can have value even where those proceeds represent only a small fraction of the ecosystem's wider economic contribution, while an ecosystem with very high welfare value can support little private financial value where no lawful capture mechanism exists. An investor therefore acquires the rights conveyed by the instrument, and ecosystem-service estimates inform the scale and structure of the wider economic opportunity set without determining the financial value of that private claim.

2.3 Missing markets, transaction costs, and incomplete rights

Many ecosystem services lack observable market prices because their economic benefits are generated through institutional conditions that make exchange difficult. Dasgupta identifies missing markets, spatial and temporal separation, open access, and poorly specified or protected rights among the mechanisms through which natural scarcity can remain weakly represented in conventional prices, while Coase's analysis of externalities shows that the allocation of rights and the costs of transacting over them affect whether external effects can be reorganised through exchange.[3][4] Payments for ecosystem services provide practical evidence of the same institutional problem, since transaction costs rise where rights are unclear, monitoring is costly, beneficiaries are dispersed, or enforcement is difficult, and the feasibility of contracting differs materially across ecosystem services and tenure structures. Market formation therefore depends upon the interaction between ecological value, rights allocation, counterparty formation, and transaction costs.

Ecological resources are governed through private, common, public, customary, and hybrid rights structures that allocate access, use, management, exclusion, and benefit rights in different combinations. Ostrom's work on common-pool resources establishes that collective and communal governance can support durable resource management where institutions define those rights coherently, while more recent payments-for-ecosystem-services research shows that different tenure structures affect decision rights, benefit distribution, transaction costs, and implementation constraints.[5] The economically relevant inquiry concerns which persons possess which incidents of authority over the ecological system and the benefits arising from it. A jurisdictionally adaptable nature-referenced asset must therefore be capable of resting on locally recognised rights structures whose substantive content supplies the relevant authority.

2.4 Measurement does not complete the market

Improved ecological measurement expands the information available to market participants by making ecosystem condition and change more observable, thereby reducing one class of transaction cost and improving verification. Remote sensing, field-based monitoring, ecological indices, and other forms of measurement, reporting, and verification increasingly allow biophysical states and changes to be represented in contractual and market processes. Measurement nevertheless answers an evidentiary question concerning what occurred, while the legal question concerns who may allocate, commercialise, or receive economic benefit from the occurrence. A scientifically robust measurement of ecological improvement can therefore coexist with uncertainty regarding which person possesses the relevant economic entitlement.

The separation is observable in mature environmental markets, where scientific quantification and legal entitlement operate as distinct requirements. Carbon standards require methodologies capable of establishing reductions or removals and also require project proponents to demonstrate the legal rights necessary to operate the activity and claim the resulting outcomes; Verra's current VCS framework expressly separates the "right to operate" from the "right to reductions and removals", while Gold Standard requires developers to demonstrate relevant ownership, tenure, and other legal rights or permissions.[6][7] Those requirements reflect the separate functions of evidence and entitlement, with measurement substantiating the environmental outcome and the applicable rights determining who may lawfully claim or commercialise it.

2.5 The institutional gap

Parts of ecological value already enter conventional prices and transaction mechanisms through land markets, insurance, regulated environmental obligations, carbon markets, payments for ecosystem services, and ordinary business cash flows. The larger investability gap concerns ecological performance that is economically material and increasingly measurable but remains difficult to access through a durable private asset whose holder can participate across future monetisation pathways. Existing nature-market instruments generally arise at the transaction layer once a particular service, outcome, or environmental claim has been defined under a specific scheme; carbon credits, biodiversity units, and service-payment contracts accordingly make selected components of ecological value transactable, with their economic object confined to the service, unit, or claim constituted under the relevant mechanism.

An upstream participation asset would establish a present legal position in relation to ecological performance before the form, timing, or existence of future monetisation is known. The architecture would need to preserve sufficient claim integrity for later transaction-layer rights to be created

consistently with the earlier participation position, while remaining dependent on the downstream institutions that make particular ecological outcomes transactable. Its economic function is therefore to make ecological performance investable in a form compatible with future market and regulatory mechanisms through which value may later be realised. Sections 03 and 04 examine the private-law and rights conditions required to support that position.

03 Asset formation and legal abstraction

3.1 The right as the economic resource

Modern asset theory distinguishes the productive source of value from the legally controlled resource held by a market participant. The IFRS Conceptual Framework provides a useful accounting articulation by defining an economic resource as a present right with the potential to produce economic benefits, locating the resource in the right and the potential benefits that it contains.[8] The principle extends beyond accounting recognition, since a contractual option, royalty, receivable, licence, debt claim, or other economic interest can derive value from an underlying business, asset, index, commodity, or future event while ownership of the underlying referent remains elsewhere. A private nature-referenced asset can accordingly be constituted as a right whose benefits depend upon ecological performance, with ownership and management of the ecological system governed separately.

Demsetz's property-rights framework reaches a related conclusion from institutional economics by treating exchange as an exchange of rights to act in relation to resources through legally defined incidents of control, use, exclusion, transfer, and benefit.[9] The economic value available to a holder depends upon those incidents because two physically similar resources can carry materially different values where the associated rights differ. Applied to ecological performance, the relevant private investment object is therefore the legally constituted position through which a particular party participates in specified benefits associated with ecological productivity. Measurement can describe the underlying state, while the investable economic resource arises once a legal position connects that state to an identifiable holder.

3.2 Contractual rights and property rights

The law permits economic participation to be separated from physical ownership through several mechanisms, although the consequences differ according to whether a right operates in personam against identified parties or in rem against a wider class of persons. Property systems generally restrict the forms of rights capable of binding third parties because novel proprietary interests impose information and verification costs on everyone who may subsequently interact with the asset, a constraint described through the numerus clausus principle across both common-law and civil-law systems.[10] Contract law allows materially greater freedom because the parties can define positive and negative obligations applying between persons who have agreed to them, without requiring the legal system to recognise a new property form enforceable against the world. The distinction provides a credible route for ecological participation because a contract can create

enforceable allocation, payment, measurement, and non-duplication obligations even where the jurisdiction has created no proprietary right called "Ecological Performance".

German law supplies one comparative example through the Genussrecht (contractual participation right), which is generally treated as a sui generis contractual financing instrument whose substantive economic content is determined by its contractual terms within a flexible legal form.[11] The contract can allocate profit-linked or otherwise contingent economic participation while membership and voting rights remain absent unless separately conferred. Sections 241 and 311 of the Bürgerliches Gesetzbuch (German Civil Code) separately illustrate the general ability of contractual obligations to require performance or forbearance and to arise through agreement, providing a comparative private-law basis for passive contractual participation.

3.3 Contingent economic benefits

A present contractual right can possess economic value even where its cash consequences depend upon future events. Option theory, contingent-claim analysis, and ordinary contract practice all recognise rights whose present value depends on later states of the world, while the IFRS Conceptual Framework similarly locates the economic resource in the present right containing the potential for future benefits.[8] This treatment is consistent with the UNIDROIT Principles, which recognise obligations conditional upon future uncertain events and permit future rights to be transferred where the right can be identified when it comes into existence.[25] Ecological participation can therefore be constituted before a biodiversity transaction, service payment, or other downstream monetisation pathway exists, provided that the legal allocation is effective, the future subject matter is sufficiently determinable, and the relevant obligor has authority to make the allocation. The existence of the right establishes the asset-forming legal position; valuation depends separately on the probability, timing, scale, and enforceability of the benefits that may follow.

The economic significance of a contingent ecological right varies with the institutional environment in which it operates. A right referencing a transaction pathway that is legally unavailable or commercially remote may have little value despite formal existence, while a right connected to established environmental markets or credible prospective counterparties may support materially higher expected benefits. Emerging nature markets add uncertainty at two levels because both the underlying ecological performance and the future market architecture can evolve over the holding period. The asset can exist before market maturity, with its price reflecting uncertainty over the states in which its economic rights become operative.

3.4 Comparative environmental precedent

Environmental law contains several mechanisms through which ecological or environmental economic benefits are legally separated from ordinary land ownership, with the form and strength of those mechanisms varying materially by jurisdiction. Western Australia's Carbon Rights Act 2003 creates a registered carbon right as a separate interest in land, expressly providing that the holder receives the legal and commercial benefits and risks associated with carbon sequestration and release while acquiring no right of possession; Australia's federal Carbon Credits legislation separately recognises an "exclusive legal right to obtain the benefit" of carbon sequestration and contemplates that the relevant right can arise through several forms of estate, registered right, Crown interest, or native title.[13][14] These statutory architectures establish the legal separability of physical possession and a specific environmental economic benefit, with ownership, management, environmental entitlement, and transaction authority capable of being allocated through different legal relationships.

Conservation covenants provide a different abstraction because they attach positive or negative environmental obligations to land and, where statutory conditions are satisfied, can bind successors who were not parties to the original agreement. England's Environment Act 2021 permits qualifying conservation obligations to burden the relevant estate and bind successors subject to registration and specified exceptions, thereby using statutory property effects to solve the continuity problem that ordinary bilateral contracts would otherwise encounter upon transfer of the land.[15] Payments for ecosystem services take another route, commonly using contracts with landholders or resource managers to allocate payments in exchange for specified stewardship conduct or environmental outcomes while leaving the underlying land ownership unchanged. Across these structures, environmental value becomes legally operative through specified authority, obligations, beneficiaries, and enforcement mechanisms.

Australia's Nature Repair Act 2023 provides a biodiversity-specific example of the separation between underlying land interests, environmental performance, and the transferable instrument created above them. A biodiversity project can require consent from specified eligible interest holders before a biodiversity certificate is issued, while the certificate itself is expressly personal property, its registered holder is its legal owner, and a transfer is ineffective until recorded through the statutory Register.[24] The regime distinguishes the rights supporting the project from ownership and transfer of the resulting environmental instrument and, although statutory and scheme-specific, provides material comparative support for a separately constituted, registry-mediated environmental asset whose existence does not depend on transfer of the underlying land.

3.5 Implications for investable ecological rights

Comparative practice establishes several building blocks relevant to an investable ecological right. Legal systems can separate environmental benefits from physical ownership, create economic rights contingent upon future environmental outcomes, impose stewardship obligations through property or contract, and allocate economic participation independently of governance control. The legal form varies across jurisdictions and environmental domains, including proprietary registration, contract, regulation, and combinations of those mechanisms. The upper-level participation right accordingly depends on sufficient underlying authority under the applicable local regime and remains bounded by the rights that regime makes available.

The asset-formation problem can accordingly be analysed as a chain of rights. One layer concerns the legally recognised relationship through which a person can access, manage, constrain, or otherwise interact with the ecological system; another concerns authority to allocate or commercialise ecological outcomes and their economic benefits; and a participation right can then allocate exposure to those benefits among holders. Each layer can be constituted differently across jurisdictions, while the upper right remains economically coherent only to the extent that the lower rights support the obligations promised. Where the economic benefits are contingent or not yet individually constituted, the legal architecture must also make the relevant future subject matter objectively identifiable when it arises through defined scope, allocation, and transaction mechanics.[25] Section 04 examines the authority required across that chain before Section 05 introduces the Nature Stock as a specific contractual architecture built upon it.

04 Legal authority and the underlying rights chain

4.1 Functional authority

A prospective issuer can constitute a credible ecological participation right to the extent that it possesses the legal authority and practical ability required to perform the obligations that give the right economic content. The relevant authority can arise through several legal categories and will differ materially between jurisdictions, so the analysis follows the functions supplied by the operative rights. Measurement access, stewardship or management influence, allocation of ecological claims, future commercialisation, non-duplication, and distribution of economic proceeds each require a sufficient legal basis somewhere within the issuer's rights chain. Formal title supplies only the authority contained in that title and any associated residual rights; the participation structure must be supported across the full set of functions promised.

Comparative carbon practice supports decomposing the inquiry into two related components because authority over the land or project and authority over the resulting environmental benefit can be legally distinct. Verra's VCS Version 5 separates the right to operate from the right to reductions and removals, while Australian carbon legislation distinguishes interests in land from the exclusive legal right to obtain the economic benefit of sequestration.[6][14] The corresponding analytical test asks, first, whether the prospective issuer possesses a sufficient legal nexus to the relevant ecological area and, second, whether it possesses sufficient authority over the ecological performance and associated economic claims. Section 05 uses the defined term "Lawful Capacity" for that combined authority, as an analytical synthesis whose application remains subject to the governing rights regime.

4.2 The legal nexus to the ecological area

The first component concerns access, control, management authority, operational influence, or enforceable constraint over the area to which the proposed participation right relates. Ownership commonly provides a strong legal nexus because the owner will often control access and management subject to regulation and existing interests, while leases, concessions, usufructs, management mandates, statutory powers, customary rights, stewardship agreements, and other recognised arrangements can supply equivalent functions in appropriate circumstances. The substantive content, duration, enforceability, and compatibility of the right determine whether it is sufficient for the obligations proposed. Measurement requires lawful access, while stewardship

commitments and negative covenants require enough management authority or enforceable influence for the obligor to perform them.

Ownership provides a useful evidentiary starting point, although its practical content depends on the rights and restrictions already attached to the land. A lease, concession, mortgage, resource right, conservation obligation, or regulatory restriction can constrain conduct that would otherwise fall within an owner's residual authority, while a non-owner can possess extensive and durable management rights through a different legal arrangement. Environmental, protected-area, forestry, agricultural, marine, and Indigenous-rights regimes can impose additional consent or approval requirements for monitoring, restoration, commercialisation, or land-use decisions. The legal nexus must therefore be established through the operative rights and restrictions applicable to the relevant area.

4.3 The ecological-performance entitlement

The second component concerns authority to attribute, monetise, transfer, allocate, or otherwise deal with the relevant ecological performance and to constrain competing claims within the chain of persons whose rights could support such claims. A right to occupy or manage land can exist separately from rights to particular environmental benefits, especially where legislation creates distinct carbon, biodiversity, water, conservation, or other environmental interests or where an owner has transferred a future benefit contractually. Australian carbon law provides direct evidence by recognising the exclusive legal benefit of sequestration as a right that can arise separately from possession, while carbon standards require developers to substantiate entitlement to the environmental products for which certification is sought.[7][14] An investable participation right therefore requires analysis of the economic claim as well as the physical or managerial relationship to the land.

The relevant entitlement may arise residually from ownership where applicable law leaves the environmental benefit with the owner and no inconsistent rights have been granted. Other regimes can reserve environmental attributes to the state, recognise community or customary benefit rights, allocate revenues separately through concession arrangements, or permit pre-existing projects and offtakes to assign future environmental claims to another counterparty. The prospective issuer must therefore map the rights capable of supporting claims to the relevant ecological performance and determine whether those rights can be bound into the proposed participation structure. The quality of the participation claim depends directly on the completeness and durability of that underlying mapping.

4.4 Composite rights structures

The required authority can be assembled through several compatible instruments where no single legal relationship supplies both components. A management concession can provide operational control while a separate agreement with the landowner or state allocates environmental benefits and transaction authority; a tenant can hold the land nexus while a supplementary agreement with the freeholder allocates future nature-market claims; and equivalent composite structures can be formed wherever different rights holders lawfully contribute the functions required for the upper participation right. The legal chain remains coherent where the constituent instruments collectively supply the necessary authority and remain mutually consistent for the relevant duration. Composite structures therefore widen the range of landscapes capable of supporting investment while increasing dependence on the continuing effectiveness of several linked agreements.

Composite structures introduce counterparty and continuity risks because the participation position can depend on several linked agreements remaining effective at the same time. Termination of a supplementary ecological-rights agreement can remove the economic entitlement while leaving physical access intact, just as expiry of the land tenure instrument can remove the operational nexus while leaving a proceeds-sharing contract nominally outstanding. Due diligence must therefore examine term, termination, renewal, assignment, change of control, insolvency, consent, and enforcement provisions across the constituent instruments as one dependency chain, with the combined rights required to support the promised participation position for the period over which it is expected to operate.

4.5 Overlapping and third-party rights

Rights held independently by third parties remain part of the constitutive analysis because they can qualify or defeat the authority on which a participation right depends. Customary, community, Indigenous, public, and pre-existing private rights can affect access, stewardship, attribution, monetisation, and the allocation of economic benefits, depending on the applicable legal regime. Verra's current framework requires consideration of overlapping or competing land and resource claims and, where relevant, additional measures including Free, Prior, and Informed Consent.[6] Australian carbon legislation separately recognises circumstances in which native title can constitute the applicable carbon sequestration right or support another person's exercise of that right under an Indigenous land-use agreement.[14]

A sound rights chain requires each legally relevant competing or superior interest to be identified and accommodated through existing authority, consent, supplementary agreement, benefit-sharing, exclusion of the affected scope, or another legally effective arrangement appropriate to the

jurisdiction. Ethical safeguards can impose requirements beyond the minimum legal test, particularly where vulnerable communities or Indigenous Peoples are affected, while the allocation of underlying rights must still be established accurately. The credibility of the participation contract therefore depends on the rights chain beneath it and the extent to which that chain supports exclusive or non-duplicative claim-making within the intended scope.

4.6 Scope, duration, and continuity

The required authority is scope-specific because a person can possess rights over one ecological domain while lacking them over another. A party may have access for measurement, authority to transact carbon under an existing project, additional approval requirements for biodiversity units, and a contractual entitlement to service payments over only part of the same landscape. Available ecological scope is therefore the intersection of what can lawfully be measured, attributed, constrained, and commercialised under the relevant rights chain. Existing obligations can further occupy only a temporal, methodological, geographic, volumetric, or claim-specific portion of the broader ecological performance.

The required authority is also time-specific because the underlying rights can expire before the participation right. A lease, concession, management mandate, or supplementary agreement can support the structure during its term while creating renewal and succession risk beyond it. Long-duration exposure therefore requires a mechanism for continuity, replacement, succession, cancellation, or other consequences if the underlying authority changes. The ecological substrate can persist after the original issuer's rights have ceased, which makes legal continuity a distinct financial risk from the ecological performance of the land itself.

05 The Nature Stock Participation Certificate architecture

5.1 Proposed form and design logic

The preceding sections establish the economic and legal conditions against which a nature-referenced participation asset can be assessed without prescribing a single instrument form. The Nature Stock is proposed as a certified, transferable contractual participation right through which the Ecological Performance of a fixed Issuance Boundary, together with economic proceeds subsequently generated from defined commercialisation of that performance, is allocated among registered Holders. The Holder acquires an enforceable contractual position against the Issuer while land ownership, ecosystem management, data ownership, and intellectual property remain governed by their underlying legal arrangements. Ecological Performance provides the ecological subject matter of the participation right, and the Registry identifies the person entitled to exercise that contractual position.

The architecture gives effect to those requirements through Lawful Capacity, which establishes the Issuer's authority, and the Issuance Boundary, which fixes the relevant area. Measurement supplies evidence of performance, while unitisation and pooling determine each Holder's proportional participation; attribution allocates that participation before monetisation, substitution governs its conversion into an economic entitlement for a defined scope, and the Registry determines contractual title. Duration, succession, stewardship obligations, retention, anti-avoidance provisions, long-stop compensation, and other protections allocate risks around that core. Their significance follows from the function each performs within the rights architecture, while the relevant calibration can vary by issuance without changing the economic identity of the Nature Stock.

5.2 Ecological Performance and evidentiary measurement

The Nature Stock attaches the Holder's primary participation entitlement to Ecological Performance attributable to the Issuance Boundary, while ecological measurement supplies the evidence through which that performance is observed and reported. Measurement outputs can include metrics, scores, classifications, reports, metadata, and other evidentiary materials, with ownership and licensing of those outputs governed separately from the ecological entitlement. The Issuer is required to procure measurement meeting a stated minimum standard and frequency and to provide Holders with free access to the resulting evidence independently of whether monetisation occurs. Data licences and intellectual-property permissions support use of that evidence, with the Nature Stock itself remaining the contractual participation right in Ecological Performance.

The methodology can vary according to ecological context and evolve as science improves, provided that the evidentiary standard preserves sufficient rigour, transparency, comparability, and independent review. A forest, wetland, agricultural landscape, or coastal system can require different indicators and spatial scales while the legal participation right remains stable across those methodological differences. Methodological change therefore occurs within the evidentiary layer, subject to safeguards against discontinuity or opportunistic remeasurement, preserving continuity in the ecological subject matter of the right as the measurement framework evolves.

5.3 Issuance Boundary, unitisation, and pooling

The Issuance Boundary fixes the geographic substrate to which the Nature Stocks relate and defines the spatial perimeter within which Lawful Capacity, pre-existing claims, ecological evidence, and future substitution must be assessed. One Nature Stock is constituted per whole hectare within that boundary, while each unit represents an equal proportion of pooled boundary-level Ecological Performance and does not correspond to ownership of a specifically identified hectare. All units are constituted at issuance, including those initially recorded against the Issuer, and no additional units may subsequently be created; the number of Maximum Authorised Nature Stocks recorded in the Registry from time to time supplies the denominator through which Holder participation is calculated. The hectare performs a standardisation and divisibility function while ecological measurement remains free to operate at the spatial scale appropriate to the process being observed.

Pooling distributes local ecological heterogeneity across the Nature Stocks issued for the same boundary. The design supports fungibility and common claim treatment where the boundary is sufficiently coherent, while excessive legal, ecological, or market heterogeneity can reduce the informational value of a common unit. Every unit carries the same contractual reference price, long-stop date, cumulative distribution amount, and repurchase calculation basis; a Holder's acquisition price or date does not create a separate class or reset those terms. Boundary construction is accordingly a substantive issuance decision involving legal coherence, ecological intelligibility, measurement feasibility, and the benefits of standardised participation. Fixing the original boundary protects the denominator against later expansion that would introduce additional substrate and alter the relationship between existing units and the performance pool against which they were acquired.

5.4 Lawful Capacity

The proposed Participation Certificate uses "Lawful Capacity" to describe the Issuer's lawful authority and practical ability, arising from one or more legally recognised rights or arrangements, to perform the functions required by the Nature Stock. Consistent with Section 04, the test combines a sufficient legal nexus to the Issuance Boundary with sufficient authority over the Ecological

Performance and economic claims proposed for allocation. Ownership can supply both components where local law and existing rights leave the relevant authority with the owner, while non-owner structures can satisfy the same test through leases, concessions, mandates, licences, stewardship agreements, supplementary agreements, or composite rights structures. The operative question is whether the combined rights support measurement, stewardship, attribution, monetisation, non-duplication, and the negative obligations undertaken by the Issuer.

Lawful Capacity is assessed by scope and through time. An Issuer can possess capacity over some ecological domains and not others, and a future Monetisation Event can require transaction-specific rights or approvals that were unnecessary at issuance. Pre-existing rights and obligations must be mapped into the available, aligned, or excluded scope before the corresponding Ecological Performance is allocated to Holders. The Nature Stock contract operates above that rights chain, making the continuing sufficiency of Lawful Capacity a constitutive legal dependency of the proposed asset.

5.5 Contractual attribution and claim integrity

Each Nature Stock carries a proportional contractual attribution to Ecological Performance attributable to the Issuance Boundary, subject to any Excluded Scope and any scope that has been substituted through a Monetisation Event. Attribution gives the Holder a present participation state before a downstream transaction exists and allows measured ecological performance to be allocated across the registered Nature Stock pool. Its legal effect lies in the Issuer's undertaking to recognise the Holder's share and to preserve the integrity of that allocation within the rights chain the Issuer controls. External reporting, regulatory recognition, and third-party environmental claims remain governed by the standards and laws applicable to those uses.

Claim integrity depends on reciprocal obligations of the Issuer and Holder. The Issuer is constrained from granting competing attribution or equivalent economic rights over the same available scope and must structure downstream transactions consistently with existing Holder rights, while the Holder is constrained from separating or multiplying an attribution in a manner that produces duplicate economic claims.[16] The effectiveness of the arrangement depends upon the completeness of Lawful Capacity because contractual exclusivity extends only across the legal perimeter the Issuer can bind. The resulting contractual allocation leaves proprietary ownership of ecological facts and superior third-party rights outside the Holder's contractual attribution.

5.6 Monetisation and substitution

A Monetisation Event occurs where a defined scope of Ecological Performance becomes the basis of a Structured Claim that is lawfully commercialised for consideration. The Structured Claim sits at the transaction layer and can take the form required by the relevant market, while the Nature Stock continues as the upstream participation asset. The constitution, first placement, transfer, or repurchase of Nature Stocks does not itself constitute a Monetisation Event, although consideration properly attributable to a bundled Structured Claim remains subject to the monetisation and anti-avoidance provisions. Completion of the Monetisation Event replaces Holder attribution for the defined scope with the Holder's pro rata economic entitlement to Net Proceeds, leaving Ecological Performance outside that scope under the original attribution architecture. Substitution preserves continuity of participation and gives the downstream counterparty a non-duplicative claim over the commercialised scope.

The precision of substitution depends on the definition of transaction scope, which can be delineated by geography, time, ecological domain, methodology, quantity, or another objectively verifiable parameter. A transaction affecting one defined component can leave unrelated performance associated with the same land available under the original attribution architecture. Where a Structured Claim or its transaction ceases to be legally effective, or the claim is cancelled, invalidated, or reversed by the relevant authority, Holder attribution revives automatically for the affected scope. Ordinary expiry instead makes the relevant scope available for future attribution and monetisation from the expiry date.

5.7 Registry and transfer

Nature Stocks are recorded in an independent Registry that identifies the Holder, the number of units held, transfers, and the other records required for the instrument to operate. Transfer becomes effective through the agreed contractual mechanics and corresponding Registry entry, allowing the transferee to assume the Holder position while the transferor ceases to exercise future rights associated with the transferred units. The Registry constitutes the definitive record of contractual title and entitlement, subject to issuance and transfer validity requirements and the contractual correction provisions. Public land registers, environmental registries, and other statutory records continue to govern the underlying rights according to their own legal effect.

Independent Registry administration reduces the agency risk that would arise if the Issuer controlled the definitive record of its own obligations. Continuity, assurance, correction, transfer, and outage procedures become increasingly important as secondary trading develops, because market liquidity depends upon reliable identification of the person entitled to exercise the contractual position.

Record-date mechanics fix payment entitlements by reference to the registered holding on the relevant date, so an accrued distribution or long-stop payment remains with that Holder following a transfer, while an uncompleted repurchase right or obligation passes with the Nature Stocks. Registry integrity and the integrity of the underlying rights chain therefore operate as separate, complementary components of the architecture.

5.8 Duration and succession

The Nature Stock is open-ended in form and has no fixed contractual maturity date, with continuing performance dependent upon Lawful Capacity. Temporary external loss can suspend obligations that cannot be performed while permitting restoration, whereas permanent loss removes the legal foundation required for participation in the affected scope and can trigger cancellation or other contractual consequences. A transfer of stewardship can preserve continuity where a Successor Steward possesses the required Lawful Capacity and assumes the Issuer obligations. The resulting duration is contractual and potentially long term, while the underlying land remains subject to its ordinary proprietary and tenure regime.

Issuer-Controlled Loss of Lawful Capacity and External Loss of Lawful Capacity carry different contractual consequences because responsibility for the impairment differs even where the economic effect on Holders may be similar. An Issuer-Controlled Loss of Lawful Capacity constitutes an incurable material breach and automatically requires repurchase of the affected Nature Stocks, with payment preceding cancellation, whereas an External Loss of Lawful Capacity engages restoration procedures before becoming permanent if capacity is not restored within the contractual period. These mechanisms allocate legal-capacity risk across the parties, with recovery still dependent on enforceability and the Issuer's creditworthiness.

The Holder's long-duration position is a contractual exposure to the Issuer, with amounts due but unpaid ranking as ordinary unsecured claims under the current Participation Certificate. In the absence of a trust, security interest, or equivalent proprietary arrangement, the payment claim has no bankruptcy-remote status. Ecological Performance can therefore persist while Issuer insolvency, breach, or loss of the legal capacity required to perform materially impairs the economic value of the Participation Certificate.

5.9 Issuer discretion, Holder protection, and residual agency risk

Management and transaction authority remain with the Issuer, while the Holder receives economic participation without corresponding management control. The Issuer is responsible for stewardship of the Issuance Boundary under a standard governing conduct and process without guaranteeing

ecological outcomes, and for determining when and on what terms eligible Ecological Performance should be commercialised; the Holder's role is passive and carries no ordinary veto over Monetisation Events. Concentrating those decisions in the steward avoids the hold-out, coordination, and transaction costs that could arise from dispersed Holder approval, while creating principal-agent risk because the party controlling the timing, structure, and commercial terms of monetisation is distinct from the Holders receiving the resulting participation economics.

The Participation Certificate allocates that agency risk through several mechanisms operating at different points in the relationship. The Issuer must use commercially reasonable efforts to identify and pursue suitable Monetisation Events; the Retention Requirement preserves continuing Issuer exposure; arm's-length and anti-avoidance provisions constrain diversion or artificial reduction of transaction value; information and Registry requirements improve observability; and long-stop, repurchase, cure, and expert-determination mechanisms allocate specified downside states. Those protections involve economic trade-offs, since stronger Holder consent rights would constrain Issuer discretion at the cost of greater transaction friction, higher retention would strengthen alignment while reducing Issuer flexibility, and stronger long-stop or repurchase protection would transfer additional downside to the Issuer through larger contingent obligations. The current calibrations, including the 20% Retention Requirement, are commercial design choices whose appropriateness depends on the circumstances of the relevant issuance.

The substitution mechanism creates a further deliberate allocation of risk. Upon Completion of a Monetisation Event, attribution for the defined scope is replaced by the Holder's economic entitlement even where consideration is deferred, contingent, payable in instalments, or not yet received in full. The downstream counterparty thereby receives a clean and non-duplicative claim, while the Holder assumes transaction-collection and Issuer-credit exposure from the point at which attribution is substituted. That allocation forms part of the economic substance of the Nature Stock and feeds directly into valuation.

06 Asset character, accounting treatment, and comparative positioning

6.1 Asset layer and transaction layer

The Nature Stock occupies a different economic layer from the transaction instruments through which ecological performance is commonly monetised today. A payment for ecosystem services is ordinarily a contract under which a payer compensates the delivery, maintenance, or enhancement of a specified ecosystem-service flow or stewardship outcome. A carbon credit is a standardised

environmental unit representing a quantified climate-related claim under an applicable methodology, while biodiversity and other outcome-based units generally represent a defined ecological outcome or measured change that can be transferred or used under the relevant scheme. Each of those instruments extracts a specified service, outcome, or claim from the broader ecological system and makes that defined object transactable.

The Nature Stock is designed as an upstream participation asset exposed to the broader Ecological Performance of the Issuance Boundary and to the economic value of downstream monetisation across eligible subdomains. At issuance the Holder acquires a continuing participation position across the set of future transaction pathways that may lawfully arise from the allocated Ecological Performance, while transaction-layer instruments monetise a defined service, outcome, or claim under the relevant market mechanism. The distinction explains the coexistence of the Nature Stock with downstream markets and the substitution rule that applies when a specific scope moves from the participation layer into a transaction-layer claim.

6.2 Accounting analysis and the relevant IFRS tests

Accounting classification provides a comparative lens on the legal resource acquired by the Holder and follows, once that right has been identified, the recognition, classification, and measurement requirements of the relevant IFRS Accounting Standards. The same ecological activity can produce materially different accounting outcomes depending on whether a party has procured a service, acquired an identifiable non-monetary right, holds an asset for sale, or possesses a contractual right to receive cash or another financial asset. The accounting analysis therefore tests the substance of the right created by the Participation Certificate, with the ecological substrate remaining the underlying referent of that right.

IAS 38 defines an intangible asset as an identifiable non-monetary asset without physical substance and treats identifiability as satisfied where the asset is separable or arises from contractual or other legal rights; recognition further requires probable future economic benefits and reliable measurement of cost.[19] IAS 2 applies where an asset is held for sale in the ordinary course of business and contains additional measurement rules for qualifying broker-traders.[20] IAS 32 and IFRS 9 apply where the instrument creates a financial asset, including a contractual right to receive cash or another financial asset, with IFRS 9 then governing classification and measurement.[12][21] The accounting analysis therefore follows the rights actually acquired and the entity's purpose for holding them.

6.3 Transaction-layer instruments under IFRS

A conventional payment for ecosystem services will often be accounted for by the payer as procurement of a service or stewardship activity over the relevant service period, with any balance-sheet asset generally limited to a prepayment or another contractual right that meets the recognition requirements of the applicable Standard. The transaction can be economically direct because the payer is compensating a service flow generated by ecological performance, while its accounting form need not create a durable separable asset. A materially different arrangement can arise where the contract grants the payer a distinct controlled right extending beyond the receipt of services, in which case the relevant recognition analysis follows the substance of that right. The ordinary PES structure is therefore best understood as a transaction mechanism whose accounting treatment follows the service or contractual rights procured.

Carbon credits are more clearly unitised and separable, while IFRS Accounting Standards currently contain no dedicated comprehensive accounting model for carbon-credit holdings. IAS 38 provides the principal intangible-asset framework where an entity acquires an identifiable non-monetary unit for its own use, while IAS 2 can become relevant where qualifying units are held for sale in the ordinary course of business; the precise treatment remains fact-specific.[19][20] The IFRS Interpretations Committee in 2025 declined to determine the accounting for acquired carbon credits separately from the IASB's broader work on pollutant pricing mechanisms, and the IASB continued to identify that topic as a potential project in 2026.[22] Existing standards therefore govern carbon-credit accounting through their application to the particular rights and holding purpose.

Outcome-based nature units raise a similar recognition question where an entity acquires a contractual or registry-based unit representing measured ecological change over a defined period. An identifiable legal right can satisfy the separability or contractual-right limb of IAS 38, while recognition still depends upon control, expected future economic benefits, and the other requirements of the Standard.[19] Those benefits can arise through revenue, cost savings, or enhancement of other economic resources, making the holder's economic nexus to the acquired unit and its intended use material to the recognition analysis. Measured and unitised ecological improvement therefore provides the subject matter of the instrument, while accounting recognition follows the controlled legal and economic rights actually acquired.

6.4 Nature Stock under IAS 32 and IFRS 9

On the current proposed terms, the Nature Stock gives the Holder a present contractual right to receive cash upon specified contingencies. A completed Monetisation Event gives rise to the Holder's contractual participation in Net Proceeds as cash is received, while the long-stop

mechanism requires an additional cash payment to eligible Holders where the common cumulative distribution amount per Nature Stock remains below the agreed threshold at the common long-stop date. That cumulative amount counts qualifying realised cash proceeds when distributions become contractually due; unpaid distributions remain separate payment claims. IAS 32 recognises that a contractual right to receive cash is a financial asset and that such a right can exist even where its exercise depends upon a future contingent event.[12] Holder-side financial-asset classification is therefore strongly supported by the present contractual structure, subject to confirmation against the definitive issuance terms and the Holder's applicable accounting facts and circumstances.

If the Nature Stock is classified as a financial asset under IAS 32, IFRS 9 governs its subsequent classification and measurement.[21] Its contractual cash flows arise from Monetisation Events resulting in realised Net Proceeds, and other contingent contractual states over an instrument with no fixed maturity date or fixed redemption schedule, giving the return profile characteristics materially different from repayment of principal together with compensation for time value and credit risk. On the current terms, that profile appears unlikely to satisfy the solely-payments-of-principal-and-interest condition associated with amortised-cost or fair-value-through-other-comprehensive-income measurement, making fair value through profit or loss the more plausible Holder-side measurement category, subject to formal accounting analysis. The result is consistent with the deliberate design of an equity-like participation exposure in which the Holder participates in variable future economic outcomes over an open-ended horizon while corporate equity, voting rights, and residual ownership of the Issuer remain separate.

Issuer-side accounting follows the obligations created by the same contract and can differ from the Holder-side classification. Under IAS 32, contingent obligations to transfer cash can constitute financial liabilities where the Issuer lacks an unconditional right to avoid settlement when the specified contingency occurs.[12] German accounting precedent for Genussrechte (contractual participation rights) applies the same substance-over-form logic, under which issuer-side equity treatment under German commercial-accounting guidance requires cumulative characteristics including subordination, performance-dependent remuneration, full loss participation, and long-duration capital, with liability treatment applying where the required equity characteristics are absent.[26] A detailed Issuer-side analysis, including the definitive long-stop, repurchase, and other payment provisions, falls outside the scope of this paper; the present analysis is confined to the Holder-side asset character and the limited comparative point that equity-like Holder economics can coexist with an Issuer-side liability.

6.5 Equity-like economic characteristics and long-duration exposure

The Nature Stock has a potentially longer economic horizon than the transaction instruments through which ecological value is realised and a return profile materially different from fixed-income debt. A service payment is ordinarily consumed over its contractual period, a carbon credit is commonly retired, surrendered, or sold once its transaction purpose has been fulfilled, and outcome-based nature units remain tied to the duration of the rights created by the relevant scheme. The Nature Stock has no fixed maturity date, fixed repayment schedule, or predetermined coupon; distributions vary with the downstream monetisation of Ecological Performance and the contractual protections attached to the issuance. Its economic profile is intentionally equity-like, comprising open-ended and variable participation in future outcomes through a contractual instrument that confers no ownership interest in the Issuer.

The long-duration position provides the financial basis for the investment thesis developed in Section 8.5. The Holder is exposed to ecological performance and to the institutional process through which parts of that performance may become monetisable, together with Issuer-credit, legal-continuity, market, counterparty, and liquidity risks. The architecture therefore functions as a continuing participation asset whose value depends on the rights conveyed and the future states in which those rights generate benefits. The equity analogy describes that economic profile and carries no implication of corporate ownership, membership rights, or accounting classification as an equity instrument of the Issuer.

07 Valuation of the participation right

7.1 Valuation basis and subject asset

Valuation begins by identifying the subject asset and the basis on which value is being estimated. The subject asset is the Holder's contractual Nature Stock position, comprising attribution rights, contingent economic participation, transferability, and any applicable contractual protections, while the ecosystem remains the underlying referent of that position. International Valuation Standards distinguish Market Value, which is based upon an arm's-length exchange between market participants, from Investment Value, which reflects the value of an asset to a particular owner or prospective owner given that party's objectives and circumstances.[17] That distinction is particularly relevant to Nature Stocks because different Holders can assign different private utility to ecological attribution even where they share identical expectations regarding future cash distributions.

Market Value reflects benefits and risks relevant to market participants, while Investment Value can incorporate benefits specific to the particular Holder where the valuation objective calls for them. The difference can be pronounced in an early market in which some Holders derive non-cash value from credible ecological attribution and reporting. As the market broadens and observable transactions develop, the market-clearing price can become increasingly anchored in common expectations regarding economic benefits and risks even while Holder-specific investment values continue to differ around it.

7.2 Expected monetary cash flows

Financial valuation can be undertaken through several methodologies, depending on the nature of the asset and the purpose of the valuation. Under a discounted cash flow methodology, the value of a Nature Stock can be estimated by forecasting the cash distributions that the Holder may receive over a defined time horizon, assigning probability-weighted assumptions to the different monetisation scenarios considered plausible during that period, and discounting the resulting expected cash flows back to present value using an appropriate required return.

For Nature Stocks, the relevant cash flows are the Holder's share of distributions arising from Monetisation Events and any other contractual cash entitlements attached to the instrument. Where future monetisation pathways remain uncertain, the forecast can incorporate multiple scenarios reflecting different assumptions regarding whether monetisation occurs, when it occurs, the scale of proceeds generated, and the Holder's resulting participation in those proceeds. The resulting probability-weighted cash flows are then discounted to present value in the same manner as other contingent future cash flows, with the required return reflecting the risks not already incorporated into the cash-flow assumptions.

7.3 Attribution and Holder-specific non-cash value

Contractual attribution can create value to a Holder before, or independently of, monetary distributions where credible ecological participation supports impact objectives, capital-allocation criteria, reporting, or another legitimate Holder use. Where that utility changes the amount a Holder is willing to pay, it enters Investment Value as a distinct non-cash benefit, while financial return remains the monetary benefit generated by the instrument. Market Value incorporates attribution to the extent that market participants demonstrably price the same benefit, allowing attribution value and expected financial return to coexist without collapsing them into a single yield measure.

External recognition affects the practical value of contractual attribution because a legally enforceable allocation between Issuer and Holder can carry limited utility where reporting

frameworks, regulators, customers, or other relevant users do not recognise the claim, while greater external credibility can support willingness to pay where attribution has operational, reporting, or mandate value to market participants. The substitution architecture further constrains valuation because monetisation of a defined scope replaces Holder attribution for that scope with the corresponding economic entitlement. Attribution value for the substituted scope therefore falls away for the same period, preventing simultaneous recognition of the monetisation benefit and the attribution benefit.

7.4 Market-formation optionality

Nature Stocks expose the Holder to future transaction opportunities that may be undeveloped at the valuation date, creating an option-like component of economic value. Myers' treatment of growth opportunities as real options illustrates how an existing economic position can derive value from future discretionary opportunities whose exercise depends upon subsequent conditions, even where those opportunities are not operating assets today.[18] The Holder has no unilateral exercise right over a Monetisation Event, so the analogy is limited to the state-contingent access to future economic outcomes embedded in the participation right.

Market-formation optionality enters valuation through the scenario distribution underlying expected cash flows. Higher probabilities of future biodiversity, carbon, resilience, or other eligible transactions increase expected proceeds, while legal or market developments that close a pathway reduce or remove the corresponding scenario. This treatment keeps the source of value explicit and allows market-formation assumptions to be updated as evidence changes, while secondary-market prices can differ from a modelled DCF where market participants hold different probabilities, required returns, attribution values, or liquidity expectations. Because the Nature Stock has no fixed maturity date, a finite DCF must also address value beyond the forecast horizon through an explicit exclusion, terminal value, or continuation assumption whose basis is supportable at the valuation date.

7.5 Ecosystem value and private claim value

Section 2.2 established that ecosystem value, exchange value, and private claim value are different valuation objects. It follows that an estimate of wider ecosystem-service or welfare value cannot be capitalised as though it were a contractual receivable of the Holder. A landscape can generate substantial flood attenuation, biodiversity, resilience, or other social value while producing little private cash unless a market, public authority, beneficiary, or other counterparty creates a payment mechanism. The private valuation therefore remains anchored in the rights and benefits actually available through the Participation Certificate.

Wider ecosystem value remains relevant as an opportunity-set indicator because large uncaptured benefits can support the economic rationale for future regulation, procurement, insurance structures, environmental markets, or private contracting. Those estimates can inform the plausibility and potential scale of long-horizon monetisation scenarios, while the probability and proportion of private capture depend on an identified or reasonably foreseeable institutional mechanism capable of converting ecological value into a lawful Holder benefit. Private valuation therefore depends on the mechanism through which ecological value can be captured, preserving the distinction between the social productivity of the ecological system and the economic resource constituted by the Nature Stock.

7.6 Risk allocation and discounting

Nature Stock valuation contains several risk categories that should remain analytically separate because they operate through different mechanisms. Ecological risk affects the persistence, quantity, quality, and credibility of future performance; market risk affects the existence and pricing of downstream transaction pathways; Lawful Capacity and title risk affect whether the Issuer can continue to perform and commercialise relevant scopes; agency risk affects the timing and terms on which the Issuer exercises its monetisation discretion; Issuer and transaction-counterparty credit risk affect expected collection and recovery; regulatory risk affects the validity or recognition of environmental claims; and liquidity risk affects the price at which the participation right can be transferred. The Holder's ordinary unsecured creditor status for amounts due but unpaid makes Issuer-credit risk economically distinct from the quality of the underlying ecological substrate. Some consequences can be represented directly through expected cash flows or scenarios, while others can affect expected recovery or the required return demanded by market participants.

Nature Stock valuation should allocate each material risk to the mechanism through which it affects value. Ecological deterioration that changes the probability or amount of future Monetisation Events belongs in expected cash flows where it can be represented with sufficient integrity, while Issuer discretion can affect the probability and timing assigned to otherwise available transaction pathways. Retention, arm's-length pricing, anti-avoidance, information rights, long-stop protection, repurchase rights, and expert determination can reduce particular agency or downside risks, with their value dependent on enforceability and, where payment is required, on the Issuer's ability to perform. Substitution before full cash receipt adds collection exposure once attribution has been exchanged for the economic claim. Risks warranting compensation under ordinary asset-pricing principles should enter the required return only to the extent that they have not already been reflected in expected cash flows or recovery assumptions.

7.7 Price discovery and market development

The relative weight placed on modelled and observed information should change as transaction evidence accumulates. Early valuations will necessarily rely more heavily on rights analysis, ecological evidence, scenario probabilities, Holder-specific objectives, and judgement concerning market formation because secondary trading and realised Monetisation Events provide limited empirical anchors. Subsequent issuances and transfers can reveal market-clearing prices, while realised environmental transactions can update the probability and value assigned to particular monetisation pathways. The asset can therefore become easier to value without any change in its constitutive legal structure.

Market maturation can follow materially different paths across ecological domains and jurisdictions. Some Nature Stocks may generate early cash flows through established carbon or regulated biodiversity markets, while others may remain predominantly attribution-oriented for long periods and later regulatory change may create or extinguish transaction opportunities. A valuation framework should update from observed evidence as those pathways develop and should not impose a fixed market-maturation timetable. The stable element is the Holder's legal participation architecture, while the states through which that architecture produces value remain subject to revision as evidence changes.

08 Evidentiary status, validation, and limits

8.1 Current evidentiary status

The principal foundations used in this paper have materially different evidentiary status from the proposed Nature Stock architecture built upon them. Ecological stock-flow relationships, non-market ecosystem services, externalities, transaction costs, and the relevance of incomplete or fragmented rights to environmental market formation are established within environmental economics, institutional economics, and environmental-economic accounting. Comparative legal and market practice further demonstrates that environmental benefits, stewardship obligations, project authority, registrable environmental units, and economic participation can be separated from ordinary land ownership through several legal mechanisms. Those propositions establish the building blocks from which the Nature Stock architecture is inferred; empirical validation of the instrument itself depends on issuance and market experience.

The further proposition advanced here, namely that those elements can be combined into a jurisdictionally adaptable participation architecture referenced to broader Ecological Performance,

is a reasoned legal and economic inference whose empirical validation remains outstanding. The two-component Lawful Capacity framework is an analytical synthesis intended to organise jurisdiction-specific rights analysis, while the substitution mechanism is a proposed contractual response to the conflict between continuing attribution and subsequent commercialisation of the same ecological scope. Hectare unitisation, pooling, Registry architecture, open-ended duration, the allocation of Issuer discretion, and the specific contractual protections are design choices whose practical effectiveness can be assessed only through issuance, transfer, enforcement, and transaction experience. The paper therefore supports the internal coherence and legal-economic plausibility of the architecture while leaving regulatory classification, market adoption, liquidity, pricing behaviour, and realised Holder performance to subsequent evidence.

The IFRS analysis in Section 06 has the same conditional status. Existing standards establish the tests for intangible assets, inventory, financial assets, and financial-instrument measurement, while no dedicated Nature Stock accounting standard exists and carbon-credit accounting itself remains an area in which the IASB has identified unresolved practice questions.[19][20][21][22] The proposed Nature Stock has contractual features that support Holder-side financial-asset classification, particularly the contingent right to economic distributions, while definitive classification still requires analysis of the actual issuance terms and Holder circumstances. Section 06 therefore provides comparative evidence on asset character and an indicative classification route, with formal accounting conclusions left to the facts of the relevant issuance.

8.2 Legal validation

Each issuance requires jurisdiction-specific legal validation because the Participation Certificate cannot standardise the underlying rights from which Lawful Capacity arises. Counsel must determine the legal basis of the Issuer's nexus to the relevant ecological area, the allocation of rights to relevant environmental benefits, the existence of proprietary, statutory, contractual, customary, community, concessionary, or regulatory interests capable of constraining the proposed participation right, and the enforceability of the Issuer's attribution, monetisation, negative-covenant, succession, and transfer obligations. Where several instruments collectively constitute Lawful Capacity, their interaction must be analysed as a single dependency chain, including duration, termination, renewal, assignment, insolvency, consent, and change-of-control provisions. The Participation Certificate can standardise the allocation logic above that chain, while its validity and economic quality remain dependent upon the legal integrity of the rights beneath it.

Transaction-level validation remains separately necessary because a future Structured Claim can depend upon legal and market infrastructure that did not exist when the Nature Stock was issued. The Participation Certificate can allocate future proceeds arising from biodiversity, carbon,

watershed, resilience, habitat, or other transactions without establishing at issuance that every conceivable transaction type will subsequently be lawful or available to the Issuer. Before entering a Monetisation Event, the Issuer must establish that the relevant ecological scope remains available, that its Lawful Capacity extends to the proposed transaction, that any required regulatory or third-party approvals have been obtained, and that no prior Structured Claim, pre-existing obligation, or excluded scope produces an inconsistent entitlement. Future compatibility arises from the capacity of the participation architecture to accommodate lawful downstream transactions as they develop; each future market remains subject to the law and standards applicable to that transaction.

8.3 Financial validation

Financial validation should focus on whether the rights, ecological information, and contractual mechanisms identified by the framework produce observable differences in issue prices, secondary-transfer prices, realised Monetisation Event proceeds, transaction frequency, and Holder demand. Relevant evidence should include the extent to which prices vary with ecological condition, the credibility and duration of Lawful Capacity, Issuer creditworthiness, transaction-market maturity, liquidity, and the presence or absence of credible attribution value to the Holder base. Repeated issuances can also test whether hectare-based pooling improves comparability and transferability, whether ecological or legal heterogeneity produces material pricing discounts, and whether particular structural protections affect willingness to pay in a manner consistent with their intended risk-allocation function. The current framework identifies the variables and mechanisms expected to matter while leaving their empirical magnitude open.

The valuation approach should migrate toward observed evidence as the market develops. Realised transactions can update the probabilities, timing, and scale assigned to monetisation scenarios; market-implied required returns can displace judgemental assumptions where sufficient secondary pricing becomes available; and Holder-specific attribution benefits can enter Market Value where observable trading indicates that market participants price them. As evidence accumulates, modelled inference should progressively give way to observed pricing and transaction outcomes even where the underlying legal architecture remains substantially unchanged.

8.4 Market dependence and unresolved environmental-economic constraints

The Nature Stock addresses one institutional component of the nature-finance problem by allowing a legally defined participation right in Ecological Performance to exist before the transaction through which that performance may ultimately be monetised. At primary issuance, the instrument can

support upfront capital formation against prospective ecological participation and future nature-market activity before a carbon credit, biodiversity unit, ecosystem-service payment, resilience contract, or another downstream transaction has been created. Secondary-market acquisition transfers an existing participation right and therefore performs a different financing function, while ecological additionality depends on the use of capital, stewardship actions, and causal evidence applicable to the particular issuance. Financing, contractual attribution, and ecological additionality are consequently separate propositions, with the upstream asset-formation function arising from the ability to constitute the transferable participation position before the ultimate commercial form of the ecological outcome is known.

The environmental-economic constraints responsible for much ecological value remaining outside conventional markets continue to govern downstream monetisation. Many ecosystem services generate benefits that are difficult to exclude others from receiving, some exhibit non-rival characteristics over relevant ranges of use, and many natural resources possess common-pool characteristics in which exclusion is difficult even though use can be rival; beneficiaries can also be spatially dispersed, difficult to identify, or individually unwilling to pay for benefits that accrue collectively. These characteristics interact with externalities, incomplete or fragmented rights, measurement costs, bargaining costs, enforcement costs, and collective-action problems, all of which can prevent a party capable of maintaining or improving ecological performance from charging those who benefit from it. A watershed can materially reduce downstream flood losses in the absence of a payment mechanism connecting beneficiaries to the steward, while biodiversity can generate option, existence, resilience, and system-level values for which no identifiable counterparty has both the incentive and institutional mechanism to pay.

Financial monetisation of the Nature Stock depends upon downstream institutions capable of converting a defined component of Ecological Performance into consideration received by the Issuer. Those institutions can arise through voluntary environmental markets, statutory biodiversity or carbon schemes, payments for ecosystem services, public procurement, fiscal mechanisms, insurance or resilience arrangements, bilateral contracting, regulated offset regimes, or other structures through which a payment obligation is allocated to a beneficiary, polluter, regulated entity, public authority, or other counterparty. Their development remains subject to the transaction-cost, collective-action, distributional, and rights-allocation constraints identified in Section 02, so the proportion of wider ecological value that becomes privately capturable will vary by market and institutional setting. The participation architecture preserves exposure across those possible monetisation pathways while the downstream market and policy systems determine which pathways become operative.

The Nature Stock's contribution is accordingly bounded by the institutional problem it addresses. Where sufficient Lawful Capacity, evidence, and claim integrity exist, the instrument creates a transferable upstream participation asset through which capital can obtain exposure to Ecological Performance before downstream markets are mature. Public-good, common-pool, externality, and collective-action constraints continue to determine whether a payer emerges and what proportion of ecological value becomes transactable, leaving realised financial performance dependent on institutions beyond the Participation Certificate. The Nature Stock therefore operates as an asset-formation architecture and, at primary issuance, a financing architecture within the wider regulatory, fiscal, market-design, and collective-action systems through which ecological externalities are internalised.

8.5 Investment thesis and the prospective repricing of ecological performance

Section 8.4 defines the uncertainty surrounding the investment thesis through the institutional conditions required for monetisation. Economic activity depends upon functioning ecological systems and the services through which they support production, infrastructure, supply chains, and human welfare.[23] That physical dependency exists before a separate market price is assigned to the relevant ecological function, creating a gap between underlying economic dependence and its representation in incentives, liabilities, and asset values where ecological condition deteriorates or scarcity increases.

The investment thesis rests on the expectation that part of that gap will narrow over time, with timing, institutional form, magnitude, and degree of private capture remaining uncertain. Regulatory intervention already assigns explicit economic consequences to environmental performance through carbon-pricing systems and biodiversity obligations, while private and blended-finance mechanisms continue to expand across payments for ecosystem services, environmental markets, and nature-related investment structures.[23] The World Bank reports that direct carbon pricing now covers close to one-third of global greenhouse-gas emissions, England's biodiversity net gain regime creates a statutory requirement and private market for off-site biodiversity units, and the OECD identifies biodiversity offsets, emerging voluntary biodiversity credits, payments for ecosystem services, procurement, and market infrastructure among the mechanisms capable of mobilising private action for nature.[23] Together, those developments provide observable evidence of selected ecological functions entering economic institutions, with the eventual scope and persistence of that process remaining uncertain.

The investment proposition is long-duration exposure to that prospective institutional repricing. As Ecological Performance becomes reflected through regulation, procurement, environmental markets, resilience financing, risk pricing, or other economic mechanisms, a participation right constituted before those mechanisms are fully developed can provide access to value that was unavailable as a separate monetisation pathway at issuance. The Nature Stock preserves exposure across multiple eligible transaction pathways over time, allowing the Holder to participate in the subset of institutional recognition that becomes lawfully and commercially available to the Issuer.

The thesis is probabilistic because the economic necessity of ecosystem services can be internalised through public provision, taxation, regulation, collective governance, restrictions on use, or private markets in different proportions across jurisdictions and ecological domains. Political, legal, technological, and transaction-cost barriers can delay or prevent market formation, and particular Issuers may capture only a limited part of the value ultimately recognised. The opportunity set is therefore supported by the expectation of greater ecological repricing, while the economics of an individual issuance depend upon measurable Ecological Performance, credible Lawful Capacity, plausible downstream counterparties or regulatory mechanisms, and a sufficiently robust rights architecture.

8.6 Revision and architecture stability

The constitutive architecture should be revised where evidence identifies a defect in the legal or economic logic, while operational components should remain capable of adaptation as ecological science, market institutions, and transaction formats develop. Improvements in ecological measurement should alter the evidentiary layer without requiring Ecological Performance to be reconstituted as a different legal object, while new transaction formats should be capable of entering through the Structured Claim and substitution architecture without changing the underlying participation rule. Jurisdictional experience may require modification of the Lawful Capacity framework where particular rights cannot be assembled as anticipated, where mandatory law supplies a stronger or more appropriate local structure, or where enforcement experience reveals that contractual allocation cannot achieve the intended result in a particular setting. A modular architecture is valuable precisely because evidence, transaction mechanisms, measurement methods, and risk protections can evolve without requiring every change to be treated as the creation of a new asset concept.

Economic assumptions should adapt alongside the legal and evidentiary architecture. Market formation can proceed faster in one ecological domain and fail in another, regulatory recognition can expand or contract the set of transactable outcomes, and the relevance of attribution to Holders can change as reporting regimes and market preferences evolve. Those developments affect

valuation, transaction design, and issuance-specific protections while the core proposition remains the constitution of a contractual participation right where the necessary legal conditions exist. Architecture stability therefore concerns continuity of that core rights logic alongside adaptation in evidence, transaction design, and market institutions, with Ecological Performance, evidentiary outputs, participation rights, and transaction-layer claims remaining analytically distinct.

09 Conclusion

Ecological systems generate economically material services whose value is only partially transmitted into private prices, principally because the beneficiaries, rights, and transaction mechanisms required for private capture are often dispersed or incomplete. Measurement improves observability and environmental-economic valuation establishes the significance of the underlying contribution, while investability arises from a legally cognisable right through which an identifiable person can participate in specified benefits. Rights-based asset theory and comparative environmental precedent support that separation between the productive ecological substrate and the private legal resource held by an investor, subject in every case to the rights available under the applicable legal regime.[24][25]

The Nature Stock applies those foundations through a contractual participation architecture anchored in Lawful Capacity, a fixed Issuance Boundary, pooled unitisation, evidentiary measurement, contractual attribution, substitution, and Registry-based title. The Holder receives an open-ended, variable economic participation position whose equity-like profile is accompanied by Issuer-credit, legal-continuity, agency, market, transaction, and liquidity risks; stewardship and monetisation authority remain with the Issuer, while retention, arm's-length and anti-avoidance requirements, information rights, long-stop and repurchase protections, and expert determination allocate the resulting principal-agent and downside risks. Valuation follows the same architecture, with expected monetary benefits, attribution value, recovery assumptions, and required return derived from the rights and protections actually conveyed, while wider social ecosystem value remains outside the Holder's private claim unless converted through a lawful capture mechanism.

The investment thesis is exposure to the prospective repricing of ecological performance as regulatory, market, procurement, risk-transfer, and other institutions increasingly assign economic consequences to ecological dependency and scarcity.[23] The timing, form, and degree of private capture remain uncertain because public-good characteristics, common-pool dynamics, externalities, transaction costs, and collective-action problems continue to govern the creation of downstream payers and markets. Within those institutional constraints, Nature Stocks make a defined contractual participation position investable before the ultimate monetisation pathway is known, while realised value remains contingent on ecological performance, legal continuity, Issuer performance, and the subsequent institutions through which part of that performance becomes transactable.

Appendix A Contractual defined terms

The following terms reflect Nature Stock Participation Certificate v3.2.5 in substantive form. Internal cross-references and supporting defined terms have been expanded where necessary so that the Appendix can be read on a standalone basis. The scope of Ecological Performance attributable under a particular Participation Certificate is determined by its Issuance Boundary and any Excluded Scope, without creating a separate ecological concept from that considered in the wider analysis. The Participation Certificate governs the rights and obligations of any actual issuance.

Defined term	Contractual definition
Completion	means, in relation to a Monetisation Event, the time at which the relevant Structured Claim has been validly created, transferred, licensed, recognised, retired, or otherwise commercialised so that the corresponding third-party right, claim, or benefit has become legally effective in accordance with the terms of that transaction
Ecological Performance	means the actual ecological condition, functioning, resilience, change, outputs, and outcomes of the Issuance Boundary, including without limitation ecological integrity, biodiversity condition, habitat condition, ecosystem functionality, resilience characteristics, carbon-related performance, and any other biophysical or ecological attributes, changes, or outcomes capable of being measured, evidenced, modelled, verified, certified, recognised, or otherwise used as the basis for attribution, claims, units, instruments, or monetisation, but excluding any Excluded Scope
Excluded Scope	means the ecological, temporal, methodological, volumetric, geographical, or transactional scope of an Existing Obligation that is not a Permitted Existing Obligation and is carved out from the Participation Certificate and disclosed as such in the issuance particulars. No attribution entitlement, Monetisation Event, substitution, Net Proceeds entitlement, or non-duplication covenant under the Participation Certificate extends to an Excluded Scope
Existing Obligation	means any pre-existing right, claim, legal or customary entitlement, contractual arrangement, registry enrolment, forward offtake, crediting programme participation, certification arrangement, or other legally binding commitment in existence at issuance that relates to Ecological Performance of the Issuance Boundary or the creation, issuance, transfer, or use of any Structured Claim derived from it
External Loss of Lawful Capacity	means a Loss of Lawful Capacity arising from events outside the Issuer's reasonable control and not caused by breach of the Participation Certificate, including expropriation, regulatory withdrawal without fault, or court orders not resulting from an Issuer breach, in each case resulting in the Issuer no longer having Lawful Capacity for all or part of the Issuance Boundary
Holder	means the person or entity recorded as holder of Nature Stocks in the Registry from time to time

Defined term	Contractual definition
Issuance Boundary	means, at any time, the land area to which the Participation Certificate applies, being initially the area identified in its header and issuance particulars and thereafter that area as reduced or corrected in accordance with the Participation Certificate and recorded in the Registry; the Issuance Boundary may not be expanded beyond the boundary fixed at issuance
Issuer	means the person or entity issuing the Participation Certificate and, following a valid transfer of stewardship under its terms, the Successor Steward
Issuer-Controlled Loss of Lawful Capacity	means any Loss of Lawful Capacity arising directly or indirectly from an act or omission within the Issuer's control, including sale, transfer, disposal, partition, or other alienation of land or the relevant management right; voluntary surrender, termination, or non-renewal of ownership, lease, concession, mandate, or an equivalent right; grant of rights to a third party inconsistent with continued Lawful Capacity; or restructuring or reorganisation that fragments or extinguishes Lawful Capacity, in each case affecting all or part of the Issuance Boundary, but excluding a transfer to a Successor Steward carried out in accordance with the Participation Certificate
Lawful Capacity	means the Issuer's lawful authority and practical ability, arising from ownership, lease, concession, mandate, licence, stewardship agreement, statute, or another legally recognised right, to control or access the Issuance Boundary to the extent necessary to perform its obligations under the Participation Certificate, including its mandatory baseline measurement, reporting, and verification, stewardship, attribution, monetisation, substitution, Registry, and payment obligations
Loss of Lawful Capacity	means the Issuer ceasing to have Lawful Capacity for the Issuance Boundary, in whole or in part, whether temporarily or permanently
Maximum Authorised Nature Stocks	means, at any time, the total number of Nature Stocks represented by the Issuance Boundary, being initially the number stated in the Participation Certificate's header and issuance particulars and thereafter that number as reduced by any cancellation effective under the Participation Certificate and recorded in the Registry. The number recorded in the Registry from time to time is constitutive and definitive, and no amendment to the header or issuance particulars is required to reflect a reduction
Monetisation Event	means an event in which the Issuer creates, transfers, sells, licenses, or otherwise commercialises a right, claim, unit, credit, or other benefit derived from Ecological Performance attributable to the Issuance Boundary in exchange for consideration. It excludes the constitution, first placement, transfer, or repurchase of Nature Stocks themselves and any activity relating solely to an Excluded Scope. That exclusion does not exclude consideration properly attributable to a Structured Claim merely because its commercialisation is bundled with a Nature Stock transaction; the anti-avoidance provisions continue to apply
Nature Stock	means a certified transferable contractual participation right that conveys the rights and economic interests set out in the Participation Certificate in respect of Ecological Performance attributable to the Issuance Boundary, and through which those rights and economic interests are allocated to a Holder and among Holders

Defined term	Contractual definition
Net Proceeds	means the gross cash consideration actually received by the Issuer from a Monetisation Event, reduced only by transaction-specific, incremental, and objectively evidenced third-party costs necessarily incurred by the Issuer to execute that event, reasonable in amount and not incurred or allocated for the purpose or principal purpose of artificially reducing the amount distributable to Holders. Those deductions include incremental measurement or verification costs required solely for that event over and above mandatory baseline measurement, reporting, and verification; third-party registry, issuance, listing, or retirement fees; transaction-specific third-party audit or assurance costs; transaction-specific external legal fees; and taxes or compulsory levies directly imposed on the Monetisation Event proceeds. Net Proceeds also includes consideration treated as received under the anti-avoidance provisions where a Monetisation Event or connected arrangement has the purpose or principal purpose of artificially reducing Net Proceeds or defeating Holders' economic participation, with that consideration determined on an arm's-length basis
Permitted Existing Obligation	means an Existing Obligation that is fully and accurately disclosed in the issuance particulars; is clearly limited in scope by time period, methodology, claim type, registry, or other objectively verifiable parameters; does not create competing or duplicative economic entitlement inconsistent with the pro rata allocation to Nature Stocks; and is structured, interpreted, performed, and, where necessary, amended or restructured so that, with effect from issuance, it gives effect to the substitution mechanism and allocates any attribution, Structured Claim, or economic value arising on or after issuance in accordance with the Participation Certificate
Registry	means the register of holdings and transfers maintained by the independent registrar in accordance with the Participation Certificate
Retention Requirement	means the requirement that the Issuer retain at least 20% of the Maximum Authorised Nature Stocks from time to time, held directly by the person responsible as Issuer and not by an affiliate, nominee, trustee, or other person. The retained Nature Stocks may not be pledged, charged, encumbered, or made subject to a total return swap, repurchase agreement, securities lending arrangement, or other synthetic transaction that economically transfers their rights or risks to another person; transfer to a Successor Steward is permitted solely to give effect to a valid transfer of stewardship under the Participation Certificate
Structured Claim	means a transaction-layer construct through which Ecological Performance may be attributed, represented, recognised, certified, valued, transacted, or otherwise commercialised
Successor Steward	means the person or entity that succeeds the Issuer through a transfer, assignment, novation, or other arrangement for Lawful Capacity over the Issuance Boundary carried out in accordance with the Participation Certificate, including assumption of the Issuer's rights and obligations

Endnotes

[1] United Nations et al., System of Environmental-Economic Accounting: Ecosystem Accounting (United Nations, 2021).

[2] United Nations SEEA, Monetary Valuation for Ecosystem Services and Assets for Ecosystem Accounting; Office for National Statistics, Principles of Natural Capital Accounting.

[3] Partha Dasgupta, The Economics of Biodiversity: The Dasgupta Review (HM Treasury, 2021); Dasgupta, "Nature and the economy", Journal of Applied Ecology 44 (2007).

[4] R. H. Coase, "The Problem of Social Cost", Journal of Law and Economics 3 (1960): 1–44; Lee J. Alston, Krister Andersson, and Steven M. Smith, "Payment for Environmental Services (Hypotheses and Evidence)", Annual Review of Resource Economics 5 (2013): 139–159.

[5] Elinor Ostrom, Governing the Commons: The Evolution of Institutions for Collective Action (Cambridge University Press, 1990); Haojie Chen, Matthew R. Sloggy, and Samuel G. Evans, "How land property rights affect the effectiveness of payment for ecosystem services (A review)", Land Use Policy 151 (2025), article 107496.

[6] Verra, Verified Carbon Standard, v5.0 (December 2025), and related Version 5 guidance and 2026 clarifications, on the rights to operate and to reductions and removals. Version 5 applies to project requests submitted after 1 January 2027; earlier submissions remain governed by v4.7.

[7] Gold Standard, Carbon Credit Rights under the Paris Agreement; Gold Standard, Principles and Requirements (project ownership, tenure, and environmental-product rights).

[8] International Accounting Standards Board, Conceptual Framework for Financial Reporting, paras. 4.16–4.19.

[9] Harold Demsetz, "Toward a Theory of Property Rights", American Economic Review 57, no. 2 (1967): 347–359.

[10] Thomas W. Merrill and Henry E. Smith, "Optimal Standardization in the Law of Property (The Numerus Clausus Principle)", Yale Law Journal 110 (2000): 1–70.

[11] Michael Stöber, "Genussrechte im Vertrags-, Gesellschafts- und Steuerrecht", LRZ 2024, Rn. 247 ff.; Bundesfinanzhof, judgment of 14 August 2019, I R 44/17, BFHE 267, 1; Bürgerliches Gesetzbuch, §§ 241 and 311.

[12] IAS 32, Financial Instruments: Presentation, para. 11 and guidance AG7–AG8.

[13] Western Australia, Carbon Rights Act 2003, ss. 6–9, particularly s. 8(1)–(2).

[14] Commonwealth of Australia, Carbon Credits (Carbon Farming Initiative) Act 2011, s. 43 (eligible interests and carbon sequestration rights).

[15] United Kingdom, Environment Act 2021, Part 7 (conservation covenants).

[16] Integrity Council for the Voluntary Carbon Market, Core Carbon Principles, section 2 (v2, February 2024); CCP Assessment Framework (tracking and double counting).

[17] International Valuation Standards Council, International Valuation Standards, "Bases of Value" (Market Value and Investment Value/Worth).

[18] Stewart C. Myers, "Determinants of Corporate Borrowing", Journal of Financial Economics 5 (1977): 147–175 (real-options analogy).

[19] IAS 38, Intangible Assets, paras. 8, 12–13, 17, and 21–24.

[20] IAS 2, Inventories, paras. 2–6.

[21] IFRS 9, Financial Instruments, on recognition, classification, and measurement of financial assets.

[22] IFRS Interpretations Committee, "Recognition of Intangible Assets Resulting from Climate-related Expenditure (IAS 38 Intangible Assets)", agenda decision (April 2025); IASB Update, January and November 2025 (pollutant pricing mechanisms).

[23] OECD, Scaling Up Private Action for Nature: Opportunities for Development Co-operation and Finance (21 May 2026), doi.org/10.1787/cae9a3dc-en; World Bank, State and Trends of Carbon Pricing 2026 (18 May 2026); England's biodiversity net gain regime under the Town and Country Planning Act 1990, Schedule 7A, and associated Defra guidance on off-site biodiversity units.

[24] Commonwealth of Australia, Nature Repair Act 2023, ss. 18, 70, and 72–76 (eligible-interest consent, biodiversity-certificate ownership, and registration of transfers).

[25] UNIDROIT, Principles of International Commercial Contracts (4th ed., 2016), arts. 5.3.1 and 9.1.5 (conditional obligations and future rights).

[26] Institut der Wirtschaftsprüfer, "Zur Behandlung von Genußrechten im Jahresabschluß von Kapitalgesellschaften", HFA 1/1994, WPg 1994, 419 (German issuer-side accounting for participation-right capital).