Forever Wild Group

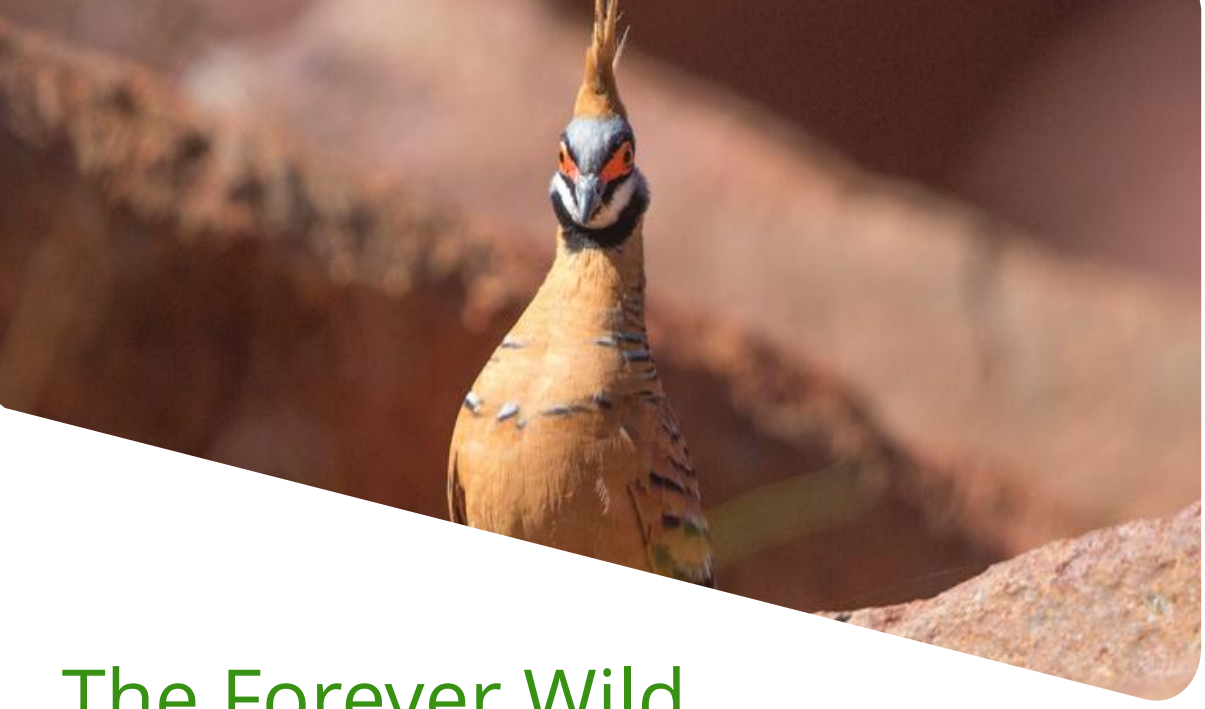
BeImpact

THE PROBLEM ~~OF~~ FOR NATURE

Risk and return for investment in nature

August 2025

Short Report Series



The Forever Wild Initiative

The Forever Wild Initiative is a group of entities under a registered charity head company. The charity provides governance for nature across the group. Each entity is focused on a specific set of complex problems in the deployment of finance to genuinely drive progress towards the global biodiversity and science-based targets.

We blend financial, legal, ecological, and governance expertise to ensure nature finance works effectively and equitably. We build investment deals and provide technical capability to ensure the centrality of nature. We drive equitable practice and accountability of outcomes, and we co-design projects on the ground with IP&LCs. Most importantly, our work is founded in the reality and complexity of nature finance. We don't just talk about nature finance - we actually create the conditions and tools it, from the ground up.

Our technical reports focus on solutions to real-world challenges in nature finance.

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Executive Summary

At present, most risk analysis in nature investment relies on Value at Risk (VaR) or generic vulnerability assessments. While these approaches can justify why nature should be protected, they are inadequate for structuring specific deals that can deliver measurable outcomes for nature.

To address this, the Forever Wild Initiative has developed a framework that clearly defines and integrates four critical elements:

a) Nature Outcome Deliverable (NOD) – the tangible outcome for nature that the investment aims to achieve

b) Nature Outcome Deliverable Risk (NOD*R*) – the probability and cost of delivering the NOD

c) Return on Investment – Nature (ROI(n)) – the quantified ecological benefit

d) Return on Investment – Financial (ROI(f)) – the monetary return

This framework enables us to:

1. Link ecological outcomes directly to investment scale and terms
2. Quantify the cost and likelihood of achieving those outcomes
3. Compare different deals based on both financial and nature returns
4. Interrogate the anticipated nature returns pre, post and during the investment tenor, and adapt where require
5. Reduce greenwashing risk through measurable, verifiable progress

Without such quantification, nature finance may be restricted to high-risk-tolerant investors, leaving much of the global capital market less willing to participate. Adopting structured NOD*R* and ROI(n) methodologies can bridge this gap and help create a functional, credible, and scalable market for nature investment.

Returns for investment and for nature are equally important

Quantitative modelling should interrogate the relationship between ROI(f) and ROI(n)

VaR frameworks are beneficial for strategy and exploring investment loss, but less so for applied risk evaluation

Development of technical tools for nature finance will allow for stronger comparisons of impact across portfolios and individual deals

Having a transparent, quantified risk and outcome model, relative to investment, will assist investors and corporates to report on impact.

Glossary

Term	Definition	Purpose in Nature Finance
Nature Outcome Deliverable (NOD)	A specific, tangible, and measurable outcome for nature that aligns directly with an investment proposition (e.g. hectares restored, carbon sequestered, species population increase).	Establishes the ecological target against which the success of investment in nature will be determined.
Nature Outcome Deliverable Risk (NOD*R*)	The quantified probability and cost risk of achieving the NOD, including factors such as cost analysis, financing adequacy, outcome feasibility, proponent capacity, and scale mapping.	Enables investors to assess the likelihood of delivery and price risk accurately, and proponents to assess the minimum finance required to deliver.
Return on Investment – Financial (ROI(f))	The monetary return from a nature finance deal, often dependent on the achievement of the ROI(n) (e.g. carbon credit generation, biodiversity-linked loan terms). Provides ROI(f) relative to ROI(n).	Aligns investor financial goals with ecological outcomes and couples the relationship between these metrics.
Return on Investment – Nature (ROI(n))	The quantified ecological gain resulting from the investment, expressed as an impact score rather than a monetary value, but linked to the cost of achieving the NOD, and relative to the ROI(f).	Measures ecological success in a comparable, scalable way across deals. Provides a justifiable, quantifiable measure of positive impact.
Value at Risk (VaR)	A statistical measure that is often applied to help inform potential losses in an investment portfolio.	Usually applied to assess vulnerability risk, and assists with strategic decisions or even compliance, but not particularly helpful in determining investment risk at a granular level
Land rights holders:	Individuals and communities who live on, own, manage or have direct rights over land and its natural resources	The identity of the stewards of nature who may be engaged in delivering a Nature Outcome.

For this report we define risk as investment & delivery risk, rather than generic or vulnerability risk.

Introduction

In our 2025 report titled 'The new world of nature finance", we articulated the challenges of properly identifying, assessing and applying risk analysis in nature investment. In our experience across multiple investment deal negotiations, spanning a range of sectors, the inability of finance providers to understand and apply appropriate risk analysis in nature investment deals represents a major impediment to finance deployment.

Often, the lack of tools and conceptual development in nature finance leads to an adjusted ROI(f) that fails the risk threshold. In nature finance, where many investment propositions fall outside known parameters, this problem is widespread. Even relatively straightforward transactions, such as those involving Australian Carbon Credit Units (a registered financial product and often underpinned by real assets), can be rated so high-risk by investors that they fail to attract capital. This unfortunate outcome is often based on:

1. Limited or no capacity to assess ecological assumptions and risk for the NOD as part of a deal

2. Opaque or incomplete costings for achieving the proposed NOD

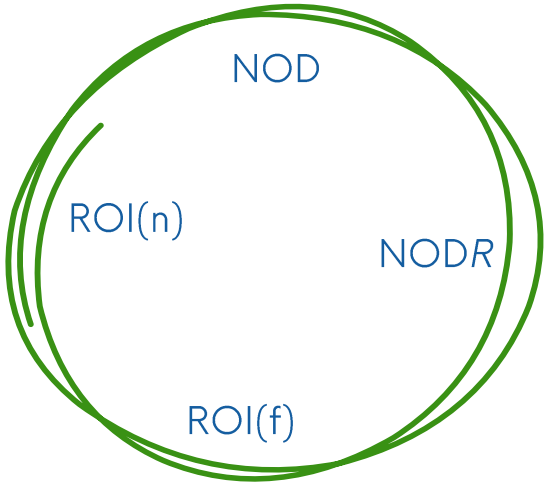
3. Limited or no ability to justifiably couple the scale and term of investment to a specific NOD

4. Limited ability to convert a proposed NOD into a quantitative, relative Return on Investment for nature

5. Limited ability to understand the financial relationship between ROI(f) and ROI(n), and no modelling tools to explore scenarios

Concurrently, there is a global dialogue around creating an asset class of 'nature', but this will not be possible without the ability to integrate fundamental investment analysis capable of quantifying the value of nature assets in terms that investors can act on. In the same vein, investments cannot simply state an intended outcome, label it as green or nature finance, and then claim unforeseen variables as the reason for failure to meet a proposed NOD. Rather, a proposed NOD should rest on replicable, credible and quantifiable analysis that can be interrogated at all stages.

If we are going to unlock large-scale investment into nature, tackling this problem is of paramount importance. In this short report, we explain the approach the Forever Wild Initiative takes to solve this problem with its technical subsidiary BeImpact.



NOD, NOD*R*, ROI(f), ROI(n)

These terms are fundamental to dealing with the material risk of delivery in nature finance because nature must be considered a key stakeholder to any investment deal claiming to protect or restore components of nature. An NOD should offer meaningful progress towards global nature targets, and in most cases, the delivery/non-delivery of that NOD should be explicitly clean on how that will impact the ROI(f).

The Forever Wild Initiative believes that understanding and developing methodologies for these concepts will play a fundamental role in unlocking nature finance.

1. **NOD. Nature Outcome Deliverable**: The stated outcome for nature that aligns directly with the investment proposition. The outcome may be split into time-bound sub-outcomes for modelling purposes and to meet investment tenor limits, noting that this may affect the impact score.

2. **NOD*R*. Nature Outcome Deliverable *Risk*:** The modelled, quantified risk of non-delivery of the NOD, including but not limited to:

    a) Cost analysis – quantifying the full cost of delivering the intended nature outcome.

    b) Financing adequacy – assessing the level of finance deployed or committed in relation to those costs.

    c) Outcome feasibility – testing assumptions that the proposed actions can achieve the stated outcome, using both scientific and traditional ecological knowledge.

    d) Proponent capacity – evaluating the ability of the project proponent to deliver the required actions effectively.

    e) Scale mapping – linking investment and ecological scope across time, area, effort, and ecological processes.

3. **ROI(n). Return on investment (Nature):** The projected gains for nature as a factor of the scale of investment and finance available, direct or indirect, in a nature finance deal. The quantification can be a nature impact score, rather than a monetary value. This is because the model adopts the assignation of monetary value as an inherent component of the NOD via the cost of delivery analysis. Key elements include:

    a) Cost mapping – identifying the costs of actions or business changes required to protect nature's interests, along with relevant cost variables, mapped directly against the NOD.

    b) Feasibility linkage – within the NOD*R*, analysing the minimum time, area, effort, and ecological processes required to achieve the NOD, and comparing these with the minimum level of investment needed to finance them.

4. **ROI(f). Return on investment (Financial)**: In nature finance deals, ROI(f) is often directly underpinned by the performance of ROI(n). Simple examples are biodiversity-linked loans or environmental market deals. In an environmental market deal, ROI(f) is tied to specific outcomes, such as carbon credits, being delivered. Investors know this linkage, but the associated nature risks and probabilities are usually unquantifiable to their risk and compliance teams, so they simply attribute the highest risk rating they can.

Further consideration of nature investment 'risk' and 'return'

There is a rapidly growing body of literature on 'nature risk' in business, i.e. the risk posed by climate and biodiversity crises to business sustainability, reputation, and legal requirements. For example, work by the World Economic Forum, in their Nature Finance and Biodiversity Credits Roadmap[1] outlines pathways to invest in nature, with extensive discussions around risk. The ASEAN+3 Macroeconomic Research Office has also produced interesting efforts to create valuations that account for ecological processes, including stochastic influences, in biodiversity-linked bonds[2]. The World Resources Institute and the Agence Française de Dévelopement (AFD), in their assessment guidance for the Grey-Green Infrastructure Accelerator[3], discuss risk as "*the combination of the probability of an event and its negative consequences*".

However, while unquestionably important, this growing body of work is largely focused on generic risk assessment, vulnerability-based risk assessment, or attempts to bound risk within ecosystem capacity, and it generally applies VaR concepts

Some work has also been completed on business impact to guide where to deliver investment to reduce negative impacts on nature. This includes the Corporate Biodiversity Footprint[4] method, relying in part on the open-source GLOBIO3[5] modelling, and many more[6]. These tools are also founded on VaR logic and are beneficial in broadly directing nature-focused investment, particularly investment into corporates with nature dependencies to assess the negative financial implications of nature loss - e.g. biodiversity decline, ecosystem collapse, water scarcity - on an underlying asset. They are helpful for justifying the concept of nature-positive investment, or the need to change business practices, but are less useful in assessing direct investment into nature.

Direct nature investment requires granular, deal-specific risk analysis to evaluate investment against an ROI. In the case of nature finance, this is both ROI(f) and ROI(n), which will often be mutually inclusive. When investors explore ROI(f), a blend of long-standing principles and qualitative and quantitative tools are applied. As such, ROI(n) requires similar robustness.

Nature Outcome Deliverable *Risk* (NOD*R*)

Ultimately, finance deals need clarity on risks and returns[7]. Investors calculate the risk of a deal by assessing the likelihood and potential impact of losing some or all of their investment, often using both quantitative and qualitative analysis. Scenario analysis, stress testing, and Monte Carlo simulations are also used to model performance under varying conditions. Qualitative factors, such as management quality and geopolitical risks, may also be considered to form a comprehensive risk profile.

Delivery partners also require cost certainty and risk analysis, and unless clear costing for the NOD is articulated and transcribed into the business case, irrespective of whether the NOD is direct or indirect, there is limited certainty that it stacks up, placing them at risk of non-delivery of an NOD.

Where risk models are unable to classify a risk, they usually default to high-risk categorisation. The associated risk-adjusted returns may then lead to unsustainable ROI(f) expectations. Often, two outcomes stem from this:

a) A deal fails to pass the risk threshold of an investor, and they opt to withdraw finance;

b) A deal is classed at tier 3/4 (speculative, or 'summit') and restructured to demand more from nature, or the land rights holder. This is because investors take the view that the greater the risk, the greater the return. Ironically, this can lead to an even greater chance of failing to deliver the NOD because ROI(f) and ROI(n) analysis are decoupled, but the deal proceeds regardless. There is a threshold beyond which these deals tip over from being nature positive to nature negative, or at best neutral. They should not be classed as nature finance, but without a quantified ROI(n) it can be difficult to challenge.

So, nature finance is no different in its need for rigorous risk-return assessment. NOD requires a stable, repeatable methodology that can quantify both the probability of delivery and the implications of underperformance. This includes assessing whether the risk of non-delivery was foreseeable, identifying the drivers of any shortfall, and determining if a partial outcome still represents a measurable ROI(n) upon which to set nature benefit claims. Without this structured approach, investors cannot accurately compare nature-positive interventions or price the risk of failure.

Input factors of NOD*R*

1. Create a clear, well-articulated objective, using internal frameworks or one of the several emerging global frameworks such as the Task Force for Nature Related Disclosures[8].

2. Convert the objective to a conservation/nature impact score using a credible, peer-reviewed scoring method. This offers a proposed ROI(n).

3. Conduct an analysis of whether the nature outcome will be met under the investment timeline. If not, provide a breakdown of the objective into time-bound sub-objectives that justifiably marry to the overall objective. The repair of nature will occur along a continuum, and the investment claim should match specific junctures of that continuum.

4. Map out implementation costs. An outcome for nature will depend on a set of direct or indirect actions. Each action will have a cost, variable over time.

5. Test ecological, cost and implementation assumptions underpinning the NOD, through the application of qualitative and quantitative models.

6. Stress test the qualitative and quantitative scores. Identify the critical NOD activities i.e. those that cannot be compromised if the NOD is to be reached. There is a direct relationship between critical activities, the direct and indirect costs of those activities and ROI(f) and ROI(n).

7. Define the probability of achieving the NOD within the investment deal (i.e. finance scale and term).

8. The NOD*R* modelling output adjusts the quantified conservation/nature impact score ROI(n). The impact score can be articulated as a credible expectation of ROI(n) that can be reported upon.

ROI(n)

Similar to ROI(f), ROI(n) can be within a range, and relative to investment. ROI(f) may break even; so too may ROI(n). Conceptually, failure to deliver a complete NOD is not necessarily a total failure, but the caveat is that lessons should be taken and improvements made to a future deal, as is best practice with ROI(f) analysis. Scoring ROI(n) is a way to quantify progress towards ROI(n) in a structured, quantifiable way where the gains, or part thereof, can be proportionally attributed to the investment.

ROI(n) is also generally a function of ROI(f). Therefore, there is an upper threshold of ROI(f) beyond which the likelihood of achieving the ROI(n) is progressively reduced. This is because the ROI(n) has a cost associated with it. Effective NOD*R* modelling explores the relationship between ROI(f) and the cost of ROI(n).

Similarly, a deal may be predicated on specific gains in ROI(n) to directly underpin ROI(f). Carbon farming is a strong example of this. Failure to achieve a minimum score of ROI(n) can directly and negatively impact ROI(f).

Another important role of the ROI(n) concept is its application in comparing nature finance deals and claims, by converting diverse nature investments into an impact score relative to the key investment variables.

Examples of NOD*R* and ROI(n)

The following examples assume a clear nature objective has been developed within an investment case.

Example 1: Sustainability Linked Loan

A bank is offering biodiversity-linked loans to landholders. The product's purpose is to enable applied finance for the landholder to underpin positive nature activities and outcomes, direct or indirect. The financial incentive is made through a reduction in interest rates linked to the NOD. The NOD may be (should be!) defined and linked to selected global targets.

The bank and landholder both aim to claim meaningful progress. The NOD will be verified using one of the accepted nature outcome standards and is usually a measure of the borrowers 'green' performance. Use of proceeds from the loan structure may be, but usually are not, determined by the lender, and the loan product is often used to lift the lender's and borrower's sustainability profile[9]*. Performance is often measured in Sustainability Performance Targets (SPTs), equating to a form of NOD. Here, we use SPT in place of NOD, as that is the usual term applied to sustainability-linked loans.*

Key considerations:

1. ***Loan formula**: Does the model or business case articulate the real and variable costs of achieving the proposed SPTs? What is the formula for the bank and land rights holder to fully assess if the loan reduction is adequate in order to achieve the outcomes? This, in turn, is linked to project ambition, the size of the loan (i.e. the amount saved for nature actions), and the relationship between the minimum investment requirement for nature and the ecological scale (or effort) needed to reach the SPTs. If this is unclear, it presents a material risk to the borrower, which must ensure their cost of delivering the outcomes remains below the interest rate savings.*

    a) *It also presents a risk to the bank, because if they have not completed a credible delivery risk analysis, then the product is questionable in its efficacy for nature*

2. ***Modelling the likelihood of SPT outcome**: NOD*R *can offer a quantifiable measure of the likelihood of reaching part, or all, of the proposed SPTs. Moreover, stress-testing the assumptions enables a borrower to prioritise actions and associated costs, and calculate the upper and lower financial and ecological boundaries required to deliver the SPTs.*

3. ***Relative scoring for comparison & reporting:** Have the SPTs been converted to an impact score using globally recognised methodologies, both for incorporation into financial modelling prior to initiation, and to calculate a relative measure of ROI(n)? Recall that progress towards SPTs/NODs is a continuum, not an absolute.*

4. ***Full or partial failure to deliver an NOD:** What if, despite the actions being delivered and fully funded, the SPTs are not achieved? How will the lender or borrower know where the failure lies? How will they communicate that?*

Potential benefits of using an NOD*R *- ROI(n) framework:

a) *Transparent risk analysis and the ability to interrogate the data pre, post and during the project*
b) *Prioritised, cost-effective actions can be modelled and agreed as milestones, relative to a minimum impact score required in the loan product*
c) *The bank can design realistic, evidence-based products that enable adequate funding for a NOD*
d) *Reduced risk of greenwashing*

Example 2: Corporate strategies and environmental markets

A company has used VaR analysis to identify nature dependencies under the TNFD. The company is a large corporate obligated to understand, manage and report on nature risk, as well as ESG claims. Communication is factored into annual reports for shareholders. To help mitigate the value and reputational risks, it is following two pathways:

1. *using publicly available guidance on how to use biodiversity and carbon credits to meet its targets under its new nature strategy. The company is keen to ensure it purchases 'high integrity' credits*

2. *making material changes to its operations to reduce the impact on the nature components identified.*

The risk team has been tasked with providing a risk analysis to support the business case.

Key considerations:

1. ***Assessing integrity**: Emerging methods may have expectations of social and environmental equity standards, but few offer modelling or stress testing of their projected NOD. Relying upon purely qualitative and narrative-based statements of integrity has led to several high-profile failures of NOD. Notably, even though some degree of ROI(n) has likely been achieved in each of these failures, they were unable to be reported as there was no quantitative ROI(n) score.*

2. ***Cost of NOD delivery**: Related to the above point, does the biodiversity credit have a clear cost of NOD, and a probability of outcome, to help ensure the delivery partner on the ground is properly supported to deliver, including in the face of variability? A commonality in many credit methods is to design the credits for buyers by bypassing quantifiable risk analysis in favour of cascading, punitive mechanisms on land rights holders (this can even include obtaining rights to the land).*

3. ***Reporting:** The company needs to report on progress by publicly communicating that they purchased nature credits. If the seller provides a quantified range of probabilities of delivering the nature outcome as part of the NODR, and a score of ROI(n) relative to investment, it can offer a justifiable model that can be interrogated.*

4. ***Business practice changes:** The company is making changes to its business practices and supply chain sourcing. These are indirect activities to reduce damage to nature. While the VaR analysis supports the need to do so, the company still requires tools to couple revenue models with the investment risk of these indirect activities. At present, it relies upon untested assumptions that 'x,y,z' changes, at the cost of '$', will equate to an improvement in nature. Without a quantifiable ROI(n) the company has an unquantified risk, potentially to its reputational profile and potentially to its investment profile, as it operates at an issuer-level[10].*

Potential benefits of using an NODR - ROI(n) framework:

a) *Integrity assessment should rely on more than narratives and future metrics. A quantified probability of outcome can be a point of interrogation by the company's compliance team*

b) *The company can report with confidence, and even if an NOD is not fully achieved, the process has been clear and the lessons can be applied to improve*

c) *The company can make a balanced cost-benefit analysis, and can prioritise on the highest impact changes relative to investment*

Example 3: Blended Finance

A program supporting blended finance is developed with the intention of derisking commercial investment into nature. A blended finance option has been proposed as the commercial investor feels they either do not fully understand the nature risk, or have calculated the risk tier to be too high for their appetite.

Key considerations:

1. ***Clarification of blend ratio**: Without a robust NODR and ROI(n), the ratio of commercial to non-commercial finance is usually based on the commercial investor's risk appetite, rather than a quantification of actual NODR.*

Creating the right conditions for nature finance is an imperative. We must urgently move from talk to action.

2. ***Assessing ROI(f) expectations to ROI(n)****: Unless ROI(n) is coupled to ROI(f), how can the parties understand whether the investor's ROI(f) is supportive or detrimental to ROI(n), and a contributor to an increased or decreased NODR?*

3. ***Does the blend achieve support for the NOD:*** *If the risk is framed only around financial risk without a quantifiable calculation for NODR, the blended finance may not actually reduce the risk of the non-delivery of the NOD – it simply reduces finance risk. The assumption must be stress tested, and NODR would support projections of risk and probability of outcomes, and adaptation of both the deal and implementation structure as required.*

4. ***Shifting the risk:*** *Another scenario is that the deal will bypass appropriate nature risk analysis, and create legal agreements to cascade the payment pressure down to nature in the case of failure of the NOD. This converts what began as nature finance to an exploitative model in which nature and land rights holder are subject to punitive measures.*

Potential benefits of using an NODR - ROI(n) framework:

The use of quantifiable NODR and ROI(n) will help to structure the discussions, manage risk, and model returns for all parties.

Connecting NOD to investment tenor

The question of connecting investment scale and term to a specific NOD presents a challenge for both investors and nature deal proponents. However, we should recognise that restoring or protecting nature is a continuum. A deal for nature should, ideally, support quantifiable progress towards globally agreed biodiversity and science targets, but, as we know, reaching those targets requires a broad and incremental adjustment – i.e. it too is a continuum. Nature deals can adopt a '**continuum approach**', linking an investment tenor to a clear, time-bound – but ecologically meaningful - NOD. This is not new, but it is very hard to do without a quantifiable nature risk & return model to integrate into the deal.

For nature investment modelling, particularly for NOD*R* and ROI(n) purposes, converting the NOD to an impact score using one of the globally acknowledged scoring tools can provide that quantification. That score, and the explicit costings to achieve it, can be built into the financial model in a way that automatically adjusts from response to scenario planning and stress testing. It would also enable nature investments to be compared side-by-side for investment scale vs impact.

Conclusion

Nature finance is at a critical juncture. While the urgency to protect and restore ecosystems is widely acknowledged, the tools used to structure and assess investments remain poorly adapted to the realities of ecological delivery. Conventional risk models such as VaR can justify the need for action, but they cannot determine whether a specific investment will achieve a defined NOD, nor measure the scale of achievement in actionable financial terms.

The Forever Wild Initiative's NOD–NOD*R*–ROI(n)–ROI(f) framework addresses this gap by defining clear ecological objectives, quantifying delivery probability and cost, and linking nature's return directly to financial return. This builds credibility, reduces greenwashing risk, and ensures nature is treated as a core stakeholder.

The path forward:

a) Develop and adopt standardised methodologies for quantifying NOD*R* and ROI(n)

b) Integrate ecological impact scores into financial models and scenario planning

c) Ensure equitable risk allocation

d) Require transparent reporting of quantified ecological outcomes, or part thereof

Scaling nature investment is not only about mobilising more capital—it is about structuring deals so that financial capital delivers measurable, verifiable benefits for ecosystems. The urgency is undeniable. The challenge now is creating the right tools and conditions, and adoption.

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