**BRIEF**

# Assessing the co-benefits of nature-based solutions

## About

This is part of a series of briefs presenting insights from the **NATURANCE** project for use by **policymakers** and **finance professionals**.

The project explored **opportunities and barriers to the use of nature-based solutions (NbS) in insurance and investment**, and was conducted in collaboration with insurance industry experts, knowledge partners, and other relevant stakeholders through Innovation Labs.

This brief summarises NATURANCE's work to:

➤ Develop an improved evidence-based approach for quantifying and monetising the co-benefits of NbS;
➤ Enable more accurate valuations to inform and stimulate greater use of NbS.

Read the **full report**, "*Methods for assessing risk reduction and cobenefits by Nature-based Solutions*", for further technical details of this new methodology.

*Strengthening the evidence on NbS performance and full value is essential to unlock informed investment and accelerate their mainstream adoption*

## Context

Nature-based Solutions (NbS) are interventions supported by nature that aim to help address climate- and nature-related risks, for example those linked to flood, wildfire or urban heat.

They also provide environmental, social, and economic co-benefits such as enhanced biodiversity, carbon sequestration, cultural and recreational services, and contribute to sustainable economic growth.

**The total value generated by NbS is often underestimated** due to limited understanding of their potential to both reduce risks and generate co-benefits.

In particular, **co-benefits are often not considered** when NbS are compared to traditional measures (such as grey infrastructure), leading to underinvestment in NbS.

Despite growing interest and recent developments, there are still gaps and limitations in the methodologies available for assessing the effectiveness of NbS and their dynamic nature over time.

Incomplete knowledge of the value of the various benefits is a significant barrier in the adoption of NbS.

## Summary of NATURANCE's work

NATURANCE conducted a systematic literature review of various methods that have been used to assess the effectiveness and outcomes of NbS in terms of their co-benefits beyond disaster risk reduction. The review compared these methods' strengths and weaknesses for their usability.

Results show that there is no single dominant approach and, in practice, co-benefits are typically evaluated through multiple methods rather than a single one.

> Turn the page to review strengths and weaknesses of methods used to assess NbS outcomes and their co-benefits.

To quantify co-benefits in monetary terms, a second literature review gathered evidence on methods to assess the economic benefits of NbS. Common economic valuation methods include contingent valuation and choice experiments as ways to capture individuals' willingness to pay for non-market goods or services, such as co-benefits derived from hypothetical NbS scenarios.

Building on these findings, an enhanced approach based on meta-analysis was developed that addresses known shortcomings of commonly used valuation methods. These shortcomings include the high cost of surveys, the lack of external validation, and heavy context dependence.

This new approach will allow decision-makers to better estimate the value of public goods and services through estimates of the public's willingness to pay for these co-benefits, when direct valuation studies are not feasible. This can pave the way for increased investment in NbS.

> Read the **full report**, "*Methods for assessing risk reduction and cobenefits by NbS*", for further technical details.

## Conclusions and implications

**1** **Evidence confirms the effectiveness of NbS** in reducing climate risks and providing co-benefits such as cultural services, biodiversity, and carbon sequestration.

**2** **Current methods have limitations**: A range of methods have previously been used to assess the co-benefits of NbS, but there is no single standardised approach and they are often used in combination. A lack of data and indicators limits the comparability and scalability of these approaches.

**3** **NATURANCE has developed an enhanced approach to address these shortcomings** and allow better estimation of the value of public goods and services. Read the **full report** for details.

**4** **Standardised, transparent approaches are vital to monetising NbS co-benefits** and thereby supporting greater use of NbS through credibility and comparability.
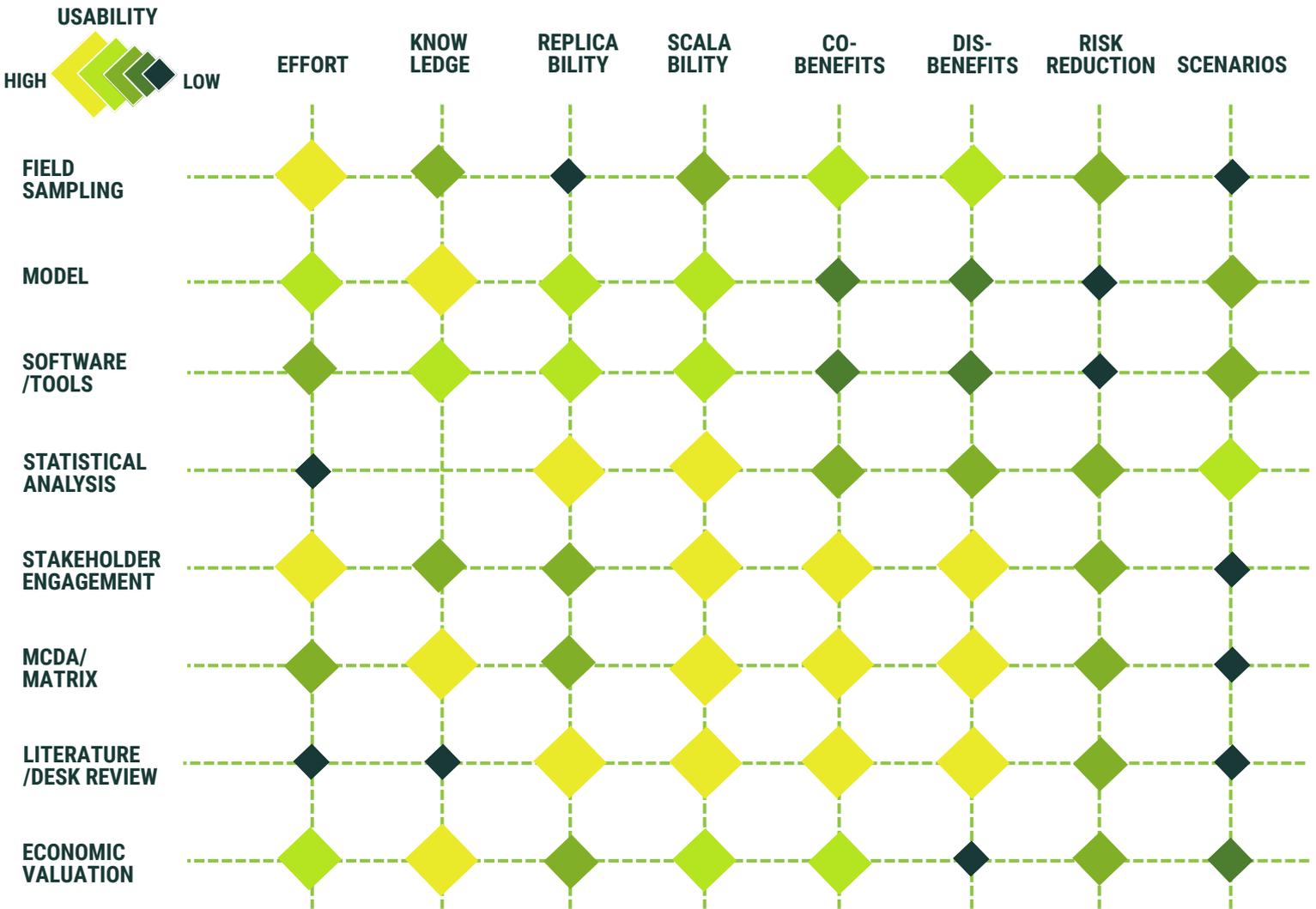
**5** **Stakeholder engagement and participation of both the private and public sectors are key to showing the true value of NbS co-benefits** and unlocking their financing.

**6** **Consideration of the risks of future climate impacts is necessary** for more accurate valuation of NbS derived co-benefits in the long-term.

**USABILITY**

HIGH ◆ LOW

| | EFFORT | KNOW LEDGE | REPLICA BILITY | SCALA BILITY | CO-BENEFITS | DIS-BENEFITS | RISK REDUCTION | SCENARIOS |
|---|---|---|---|---|---|---|---|---|
| FIELD SAMPLING | | | | | | | | |
| MODEL | | | | | | | | |
| SOFTWARE /TOOLS | | | | | | | | |
| STATISTICAL ANALYSIS | | | | | | | | |
| STAKEHOLDER ENGAGEMENT | | | | | | | | |
| MCDA/ MATRIX | | | | | | | | |
| LITERATURE /DESK REVIEW | | | | | | | | |
| ECONOMIC VALUATION | | | | | | | | |

The methods indentified in the review include:

➤ **Field sampling and observations** to monitor environmental and biodiversity conditions;

➤ **Modelling approaches and analytical software** to simulate ecosystem processes and compare NbS with grey infrastructure;

➤ **Statistical analysis** to estimate parameters, validate results and link ecological variables to benefits;

➤ **Stakeholder engagemen**t to capture socio-economic values, perceptions and willingness-to-pay;

➤ **Multi-criteria decision analysis** to evaluate trade-offs and rank options;

➤ **Literature reviews** to establish baselines and support knowledge transfer;

➤ **Economic valuation methods** to monetise co-benefits such as carbon sequestration, temperature regulation, resource quality and recreation.

The usability of these methodological groups was assessed using criteria reflecting their broader applicability and key requirements identified in the NbS effectiveness literature.

**Overall effort**: Level of resources required (data, software, infrastructure, time, personnel);

**Knowledge and expertise**: Degree of technical, scientific and local expertise needed;

**Replicability**: Potential to transfer the method across different sites and ecosystems;

**Scalability**: Applicability across spatial scales (local to international);

**Multiple co-benefits & disservices**: Capacity to assess several co-benefits, as well as unintended negative effects;

**Disaster Risk Reduction**: Ability to capture DRR benefits alongside other co-benefits;

**Future climate scenarios**: Extent to which the method integrates future climate scenarios.