

June 2022



TERRANOMICS

Nature Based Solutions – a review of current financing barriers and how to overcome these

Prepared by Terranomics for WWF-UK and the Climate Solutions Partnership between WWF, HSBC and WRI

PUBLIC REPORT



Report contacts

Please direct any queries relating to this report to:

Chris Knight, Director, Terranomics Limited: chris.knight@terranomics.org

Jim Stephenson, Director, Terranomics Limited: jim.stephenson@terranomics.org

Acknowledgements

We are grateful to Lesley King, Will Baldwin-Cantello, and Sonia Sezille from WWF-UK for constructive feedback and timely input throughout the assignment. The team from WWF, WRI and HSBC that attended a workshop on 2nd December 2021 also provided useful feedback. 18 individuals provided us with invaluable insights during our analysis through a series of interviews and a roundtable discussion on the 8th of June 2022.



TERRANOMICS

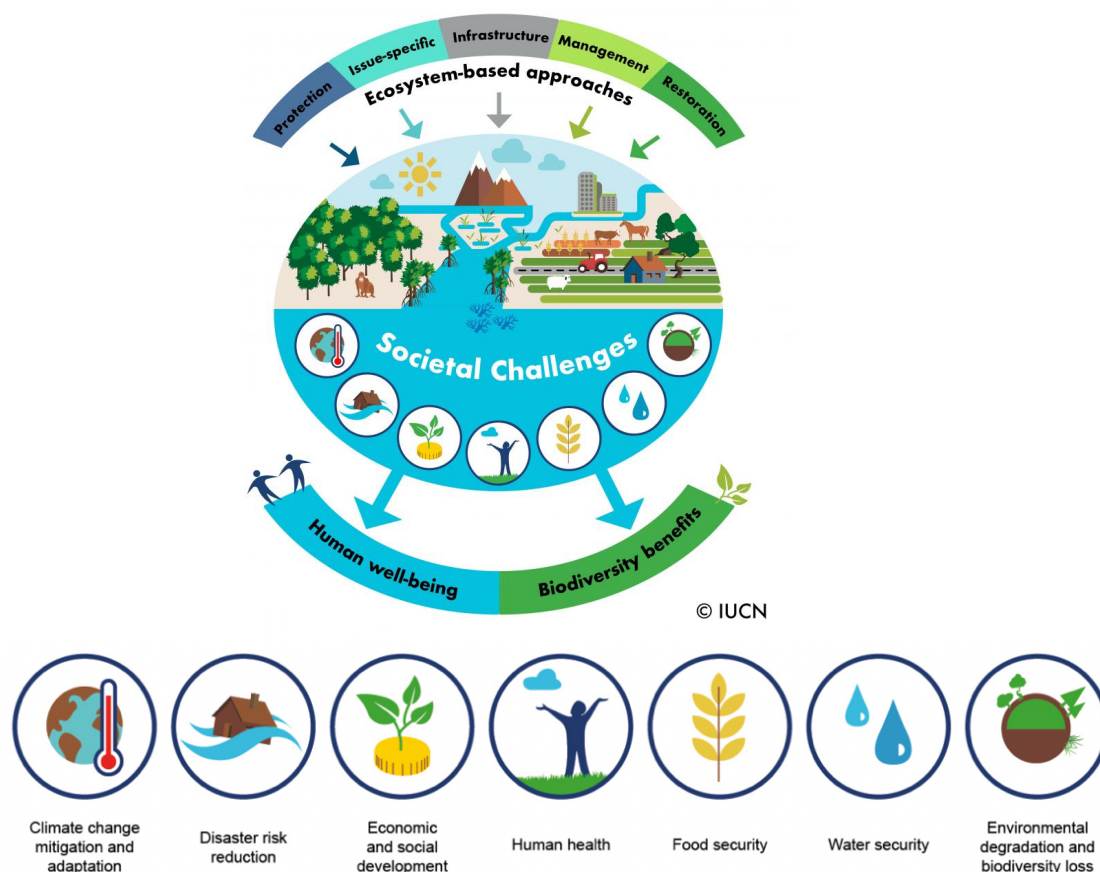
Report authors

The Terranomics consultancy team included Chris Knight, Jim Stephenson, and Tom Chellew. Will McFarland (an independent consultant) was also a core team member. Terranomics is a consultancy with 20 years of experience working on public and private sector approaches to environmental challenges. We are focused on using local and global financial systems to support sustainable land use, conservation, and climate change solutions.

Introduction and background

Nature-based Solutions (NbS) are solutions or actions to “*protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human wellbeing and biodiversity benefits*” (IUCN, 2016).

Figure 1 Defining Nature-based Solutions (IUCN, 2020)



Looking at the potential for NbS to deliver on international objectives for climate, biodiversity, and land degradation it has been estimated that global flows into NbS need to quadruple to at least USD 500-970 billion per year by 2050 (UNEP, 2021). While the market for and investment in NbS has developed, it is still at an early stage, and dominated by public funds, which have limited scope to increase. Private finance will therefore need to be mobilised at scale to address this gap.

Through its [Nature-based Solutions Accelerator](#), the Climate Solutions Partnership (CSP) between HSBC, WWF and WRI aims to build and scale the NbS marketplace by creating the systemic infrastructure needed to reduce risks and costs and drive higher volumes of NbS activity. To inform this, WWF-UK commissioned a review of barriers to accessing finance for, and investing in, nature-based solutions. This is a summarised version of that review, which has two objectives:

1. To gather data and act as a 'baseline' or 'state of play', that unpicks the global finance sector's perspectives and motivations regarding barriers to investment in NbS.
2. To inform the design of solutions to those barriers, that WWF and the CSP could deliver.

Methodology

The findings in this summarised report are based on qualitative interviews with key experts within the NbS finance community. In preparation for interviews, a rapid desk-based review was conducted, the result of which was a null-hypothesis as to what the key barriers were. This was shared in advance with the interviewees and used as a prompt during the interviews themselves.

In total 18 interviews were conducted in November-December 2021, across representatives of three broad groups of experts:

1. *Mainstream financial institutions*, including commercial banks, asset managers and insurance companies.
2. *Impact investment funds*, including specialised venture capital firms, boutique investment advisors and blended finance or impact investors.
3. *NbS-focused accelerators, incubators, and financiers*, including accelerators, technical assistance facilities and development agencies.

Follow-up interviews were held in April-May 2022 to validate the final barrier framework and the key findings, as well as looking at how the CSP integrates the findings into its future work programme. A roundtable in June 2022 explored this further, with a focus on potential solutions.

Key findings, results, and outputs

Following the interviews, the notes were collated and analysed by the research team. This information was used to produce the following:

- An update to the 'null hypothesis' to produce a final *Barriers to Investment in Nature Based Solutions Framework* (see Figure 2) that comprehensively reflects the perspectives of the experts interviewed, as well as the background literature review.
- A simple ranking of the most important barriers.
- Detailed analysis of each barrier, including its subcomponents, and perspectives from different types of actors.
- The priority barriers and initial pointers on potential solutions.

Ranking of the barriers

Interviewees were asked to identify 3-5 of the most important barriers from the framework, which enabled a ranking reflecting the frequency of mentions for each to be developed (more information on the ranking can be found in Appendix 1).

Table 1 Ranking of barriers based on frequency of mentions by interviewees

Rank	Barrier cited	Frequency	Level in the 'barriers framework'
1.	Information on returns and impact	11	Portfolios and fund managers
2.	Capacity of finance sector	10	Global financial system
=3.	Supply	8	Portfolios and fund managers
=3.	High project-level risks	8	Projects
5.	Standardisation and structures	7	Portfolios and fund managers
=6.	Market failures	6	Projects
=6.	Intermediaries	6	Portfolios and fund managers
=8.	Policy and regulatory frameworks	4	Projects
=8.	Laws and norms	4	Global financial system

Figure 2:
Barriers to investment in
Nature Based Solutions



Global financial system

Capacity of finance sector ☆ 2

- Lack of skills and tools to assess risk
- Limited availability of training and knowledge products
- Novel asset class lacks products and instruments
- Misaligned internal rewards structure and business strategy

Laws and norms ☆ 8

- High reputational risk
- TCFD requirements leave no bandwidth for nature
- Fiduciary duties



Portfolios and fund managers

Standardisation and structures ☆ 5

- Financing - novel deal structures
- Projects and delivery – new and complex partnerships
- Few standards or guidelines to define NBS
- Limited risk sharing and reduction mechanisms

Supply ☆ 3

- Low volume, and primarily small-scale deals
- Weak bankability of deals that do exist
- Effectiveness of pipeline acceleration efforts is unclear

Information on returns and impact ☆ 1

- Weak evidence base on returns and benefits
- No universal metrics on impacts and effectiveness
- Weak existing monitoring data and capacity
- Additionality, attribution, and permanence challenges

Intermediaries ☆ 6

- New investment managers lack track record
- Investors lack local networks and knowledge
- Disconnect between project developers and financiers
- Stakeholders lack skills to structure partnerships



Projects

High project-level risks ☆ 3

- High up-front costs and long lead times
- High risk from negative social impacts
- Poor fundamentals – remote, risky, long-term investments

Market failures ☆ 6

- Hard to monetise benefits except for carbon
- Weak or unclear property rights
- Returns often low without 'stacking'
- Concessional finance expensive to access

Policy & regulatory frameworks ☆ 8

- Unclear long term policy support and use of public instruments
- Few relevant standards
- Poor coordination between public budgets and private financiers

Ranking

Interviewees were asked to identify 3-5 of the most important barriers.
This ranking reflects the frequency of mentions for each barrier.

☆ 1

Position

Summarised analysis of top five barriers

This summary report includes the top five identified barriers cited frequently during the interviews (out of 9) and the different subcomponents or 'key aspects' they are comprised of.

1st Information on Returns and Impacts

Key message: While good tools for measuring impact may exist, they face scale and cost challenges. Meanwhile, an almost complete lack of transparent and benchmarked data on market rates and returns is holding back mainstream investors.

"There is great pressure on fees charged to asset owners, so money managers want cheap analysis (e.g., 0.7% fees for passive climate themed funds) ... and... more specialised NbS benchmarks in the market." Interviewee from investment bank.

This barrier comprises the following key aspects:

- There is a **weak evidence base in terms of both financial returns and the impact benefits from NbS projects**. In the case of financial returns, there is a lack of transparent and public data on the performance and return on investment of NbS projects, primarily because these are part of such a new 'asset class'. In addition, the market is opaque, with a lot of bilateral and private transactions. This all makes it difficult for the investors to know what is happening in the market, to price or analyse the risks and returns available, or to overcome presumptions that NbS projects cannot achieve market-rate returns.
- In the case of impact data, this is partly driven by the fact that there **are no universal metrics on NbS impacts and effectiveness**. Information on the benefits of NbS projects is too diverse, inconsistently measured and project-specific to be widely used by the finance sector.
- If metrics can be decided upon, then **weak existing monitoring data and capacity to collect new data at local level** can create a high cost for such data collection, undermining project returns.
- Another challenge facing NbS projects is that of identifying the **additionality, attribution, and permanence of NbS outcomes**. The information gaps and lack of standardisation leave the sector open to greenwashing, reducing trust and momentum in NbS as an emerging asset class.

2nd Capacity of Finance Sector

Key message: NbS is still too difficult a theme for easy 'processing' in large financial institutions, which lack the staff or structures to address it properly.

"Talented people with the skills to carry out analysis, structure deals and deliver asset management are in short supply for this new asset class. This is leading to partnerships between asset managers and specialists in the sector" Interviewee from asset management firm.

This barrier comprises the following key aspects:

- There is a **lack of skills and tools within global financial institutions** with which to assess risk and returns in NbS projects and structure investments appropriately. This is driven by the difficulty in finding and training appropriate staff, with most global financial institutions (FIs) outsourcing such investments to 'boutique' investment managers specialised in either NbS, or certain geographies, or both.
- The **limited availability of training and knowledge products specifically for finance sector professionals**. There is no NbS-specific knowledge management or training within FIs, and there is also no knowledge exchange between them either (for example, a community of practice). Mainstreamed finance sector training modules, such as those within the Chartered Financial Analyst certification are non-existent for NbS projects.
- NbS is a **novel asset class which lacks products and instruments**. This affects both global and local FIs. At a management level, the fact that there is no 'institutional home' for NbS means that responsibility for it remains unclear. NbS tends to be allocated to the 'real assets' portfolio, alongside real estate, and infrastructure, for example, although this is imperfect. This has knock-on effects for doing deals – the types of structures that might work for some assets (for example creation of an LLP) might not work for a lot of NbS projects.
- Having **internal reward structures and business strategies that are misaligned with investing in NbS** or achieving growth in NbS assets within a portfolio. Even for 'impact' oriented investments (those seeking to positively address nature and biodiversity), business risk and returns will always be more important than impact outcomes. Impact investment funds may be inclined to avoid high risks to achieve more stable financial returns, avoid losses, and show credibility.

=3rd Supply

Key messages: Despite efforts to accelerate and develop projects, the pipeline is still poor - volume is low, and the deals that do exist are often too small and not financially viable.

"Insufficient supply of projects has continued to be a problem for the last decade or so and is still not solved. There is nothing to invest in at scale despite efforts and commitments."

Interviewee from boutique investment manager and advisor.

This barrier comprises the following key aspects:

- The pipeline is currently **too low in volume, and primarily comprised of small-scale deals**. Small deals bring increased transaction costs as a proportion of the available returns and require (more) intermediaries to support aggregation and deal structuring.
- NbS project developers are often not thinking commercially enough and as a result there is **weak bankability of deals that do exist**. This lack of pipeline in turn impacts upon the ability of intermediaries to raise funds from investors (including development finance for pipeline origination and technical assistance).
- These issues have existed for the last decade (or more depending on how far back you define NbS market initiation), and attempts to address them have been made, however the **effectiveness of pipeline acceleration efforts to date is unclear**. Accelerators are spread too thin and not targeted enough (geographically, or thematically), reducing their impact. In addition, a lot of the focus is on early-stage

project development and is therefore not scalable. Accelerators are not systematically raising the capacity of intermediaries (fund managers, project developers, NGOs).

=3rd High Project-level Risks

Key message: Many inherent characteristics of NbS projects mean that they suffer from poor economics and high levels of risk, except for some carbon projects.

"What makes the difference in the economic analysis of most NbS projects is the ecosystem benefits being produced (including carbon). The price of carbon is the make-or-break part of the finances." Interviewee from boutique investment manager and advisor.

This barrier comprises the following key aspects:

- NbS projects typically have **high up-front costs and long lead times** due to the efforts required in designing, developing, and structuring the project. These include building partnerships with local stakeholders and communities. This results in unfavourable returns as relatively high costs are borne up-front and the project's operational (and revenue generating) phase is delayed.
- The projects themselves often have other **poor fundamentals – such as being in remote places, in risky markets, relying on entrepreneurs/small and medium-sized enterprises with little track record, comprising long-term investments**. NbS projects may be most needed in rural areas, for example near forest frontiers, that are poorly connected to markets and trade routes. Many investors and implementers, but not all, are specifically trying to implement NbS in emerging and frontier economies, which bring a great degree of risk. The long-term nature of such investments magnifies all these risks, as well as undermining present-value of the returns and benefits generated by the investment. The result is that NbS projects have a high break-even point.
- There are **high (perceived or actual) risks from negative social impacts/local stakeholders protesting** with any project operating in the land, forestry, agriculture, or REDD+ sector. Due to the perception of risk by the end investors, fund managers and intermediaries also need to be very aware of these risks. Although some standards exist among the development community,¹ it appears that none have suitable traction or universal acceptance in the commercial sector.

5th Standardisation and Structures

Key message: There is a lack of standards on NbS that are trusted by financial institutions, and very little standardisation in the transaction structures used.

"Commonality in the measurement of impact is critical. For the standards we do have, education and profile raising is important to raise awareness." Interviewee from asset management firm.

¹ For example, the IFC Performance Standards and GCF Safeguards appear to be universally accepted as high-quality assurance mechanisms for environmental and social risks.

This barrier comprises the following key aspects:

- From a finance sector perspective, **NbS is a new asset class and requires novel deal structures**. Many of the instruments available for financing ventures have come from the technology sector, or from the infrastructure and renewable energy sectors. These sectors have standardised instruments. However, NbS projects are rarely suitable for these instruments, and incorporate a wide variety of underlying business models and contexts.
- In addition, from a delivery perspective, often **NbS requires new and complex partnerships** between implementers, investors, and stakeholders (e.g., communities, and governments). This contributes to increasing the transaction costs of NbS.
- There is **ambiguity over what constitutes 'NbS' with few or disparate standards or guidelines** to follow. While organizations have attempted to scope and define the themes that constitute NbS (see Table 2 below), the finance sector is only just beginning to understand its role in NbS, and there is a continuum from public-goods projects to commercial projects with a wide variety of possible positive (and negative) impacts attributable to NbS. Standardising analysis, and valuation, of projects will help greatly.
- The deal structures being offered are limited and are not really attuned to the needs of NbS projects. There is a particular gap with respect to **risk sharing and reduction mechanisms**, such as guarantees, which can be impactful in incentivising FIs with plentiful capital and capacity into riskier, but impactful, investments. This can simultaneously build the skills of FIs to manage such investments, and lead to a better understanding of the financial returns possible from NbS.

Table 2 Categories and Examples of NbS approaches (IUCN, 2016)

NbS Category	Examples
Ecosystem restoration approaches	<ul style="list-style-type: none"> • Ecosystem restoration • Ecological engineering • Forest restoration
Issue-specific ecosystem-related approaches	<ul style="list-style-type: none"> • Ecosystem-based adaptation • Ecosystem-based mitigation • Climate adaptation services • Sustainable forestry • Sustainable agriculture • Ecosystem-based disaster risk reduction
Infrastructure-related approaches	<ul style="list-style-type: none"> • Natural infrastructure • Green infrastructure
Ecosystem-based management approaches	<ul style="list-style-type: none"> • Integrated coastal zone management • Integrated water resources management
Ecosystem protection approaches	<ul style="list-style-type: none"> • Area-based conservation approaches, including protected area management

Validating the barrier framework

Based on a series of follow-up interviews in April-May 2022 with the same group of finance sector representatives, there was **overall agreement with the barrier framework and rankings**, though additional comments and issues raised included:

- The significance of these barriers differs widely between **carbon-focused vs non-carbon NbS**. There is a robust and growing market for NbS-based carbon credits, but there is an **absence of a strong scalable market for the non-carbon ecosystem services** that NbS projects might provide. Non-carbon NbS projects are not monetised in the same way around a single metric. This carbon vs non-carbon distinction could influence the ranking of the barriers.
- On the Capacity of the finance sector (Barrier 2), interviewees noted that this also stems from the lack of exposure of global FIs to the **natural resources and primary production sectors** directly, and the **project-level financing that NbS typically requires**. Therefore, the finance sector might lack the mandate to develop NbS capacity.
- When reviewing the barrier framework, interviewees noted that **reputational risks** associated with NbS projects are underplayed in the barrier framework. The potentially high reputational risks that investors face if negative social impacts affect their investments was cited by many as a critical issue preventing wholesale movement by investors into NbS, alongside other land, forestry, agricultural investments. One of the main capacity issues for the finance sector (Barrier 2) is around assessing and understanding these reputational risks, rather than the financial structure of the NbS deals.

Prioritisation of barriers for the Climate Solutions Partnership work programme

From the follow-up interviews, three barriers were prioritised based on their ranking in importance, and the scope for CSP partners to contribute meaningfully towards them, considering the nature of the organizations involved. These were:

- Barrier 1: Information on returns and impact;
- Barrier 2: Capacity of the finance sector; and
- Barrier 5: Standardization and structures

Proposed solutions to NbS financing barriers

The re-engagement process with interviewees and roundtable was also used to narrow down a set of solutions which could have the potential to overcome these priority barriers (Barriers 1,2 and 5). An overview of some of the proposed solutions is provided below:

Solutions to Barrier 1: Information on returns and impact

1. **An NbS country database for finance professionals** – this would help bring down a transaction cost barrier by reducing the time needed to assess NbS opportunities and risks in different jurisdictions. Data at a sub-national level is especially needed.
2. **More in-depth NbS sub-national data in key biodiversity areas/deforestation/degradation frontiers** – this could include data on emission factors in key commodity landscapes, which is useful for multi-national corporations considering sustainable sourcing interventions in certain areas. Certain jurisdictions (e.g. Brazil) already have readily available spatial data that allows impact investors to target specific areas and have confidence that their investments will help address this issue. Support for other jurisdictions in key deforestation frontiers to develop similar levels of data and analysis on nature-related threats in a form that is usable by investors this would be highly valued.
3. **An NbS transaction database to help with benchmarking deals** – looking at how infrastructure investment (as an example) developed into a discrete asset class, it appears that project benchmarking was pivotal. As it stands, the NbS market is very opaque and much more transparency is needed on how deals are being structured and how money is distributed. The aggregation of data on returns and pricing was also seen as an important potential aspect of this database.
4. **More detailed case studies²** – to help build an understanding of how investable NbS projects look and function. These case studies can demonstrate the role that blended finance plays in NbS transactions. Good case studies may also help financiers understand how NbS business models can meet their investment and risk criteria.

Solutions to Barrier 2: Capacity of the finance sector

1. **Targeted Technical Assistance (TA) packages for domestic FIs** – on how to engage with NbS, what it is, where the opportunity lies, and how to assess risks. This could build on the broader ESG capacity development efforts that are already happening with FIs (e.g. the CFA Certificate in ESG Investing). However, any TA should be coupled with additional in-house budget and staff, rather than burdening existing staff. There could also be targeted support for domestic FIs to help them to access and engage with concessional finance (GCF etc.).

² the following databases contain relevant case studies and resources:
<https://www.naturebasedsolutionsevidence.info/evidence-tool/>
<https://casestudies.naturebasedsolutionsinitiative.org/>
<https://www.greenfinanceinstitute.co.uk/gfihive/useful-resources/>

2. **A 'regional' International Climate Finance Accelerator (ICFA) model** – the ICFA is a networking and mentorship programme that accelerates aspiring fund managers and aims to build an ecosystem of professionals. Something similar could be incorporated supporting existing regional and national impact investors to build their technical capabilities in NbS.
3. **Project developer and origination accelerators** - a variation on the above idea is to target project developers operating at a regional or national level who would benefit from incubation/acceleration support. Linking this with solution 2 above, there is value in concentrating TA support in project developer and impact investment communities in particular prioritised locations. This could help smaller project developers to scale-up more quickly and provide broader impact investors with the technical awareness they need to engage with NbS.
4. **Support the development of 'investor clubs' and matchmaking of interested parties** in NbS transactions. This could include a club for investors to find NbS deals and 'club deals' where they invest and pool their assets in NbS projects together. As projects grow in scale and become scarcer, it was felt that this arrangement could help investors to locate interesting prospects with greater efficiency and confidence.

Solutions to Barrier 5: Standardization and structures

1. Build on the IUCN Global Standard for NbS to create **a standardized finance sector NbS taxonomy and common set of criteria**. This could work with initiatives such as the Natural Capital Investment Alliance or 'second-party' opinion providers (as used by the International Capital Market Association (ICMA)) rather than certification schemes. There could also be support around profile building and awareness raising around the existing standard.
2. Work with existing NbS marketplaces and platforms to help **standardize definitions and metrics for NbS outcomes**. There are existing marketplaces and platforms that are aiming to create a high-integrity market for NbS through combining scientific and financial data. However, these are often disparate platforms or at an early stage of development.

Overall conclusions on barriers to investment and opportunities to overcome them

- **No one barrier currently dominates the rankings.** The consultations highlighted barriers across all three 'levels'. This differs from the general status of discussions on the NbS market around five years previously, when lack of a strong pipeline was seen as the major block on investment scaling.
- Interviewees tended to focus on barriers at or near the level at which they operated and acknowledged strong links between barriers within any one level. **It may be possible to cohesively address a sub-group of barriers at one level with a solution or cluster of related solutions.**
- **Interviewees' views and suggestions were often based on their experiences in the development of the carbon market.** There may be missed opportunities to learn other lessons from the development of the carbon market and apply that to NbS market interventions.
- **There is a quite basic need to elevate the understanding of what nature-based solutions are amongst the investment community.** NbS extends well beyond carbon.
- There was **a clear divergence in barriers and opportunities between developed and developing countries.** The solutions should be tailored accordingly.
- A range of **10 specific ideas on solutions** to address these barriers were identified. These are new ideas or are already being implemented to some extent.
- Finally, although not a capital markets or finance sector issue per se, the activity of **'supply chain companies'** was raised by interviewees. This includes companies acting in a 'vertically integrated' way to invest in and deliver NbS. These groups could be important target audiences for accelerating the growth of the market for investment into NbS.

References

IUCN (2016). [Nature-based Solutions to address global societal challenges](#). Gland, Switzerland: IUCN.

IUCN (2020). [Issues Brief: Ensuring Effective Nature-Based Solutions](#). Gland, Switzerland: IUCN.

UNEP (2021). [State of Finance for Nature 2021](#). Nairobi.