Leveraging Nature-based Solutions for adaptation by businesses

Key Messages

- Climate change poses significant threats to society and nature – and by extension to businesses.
- In addition to the direct impacts of climate change, like increased flood damage to factories or transport infrastructure, indirect impacts can have serious consequences for businesses. For example, climate change can reduce the availability of certain products in a company's supply chain.
- Almost all businesses depend upon nature to some degree. As climate change continues to damage and degrade nature, and the ecosystem services that everyone relies upon decrease and change, businesses are starting to see the impacts. This makes a strong case for businesses to regularly identify, assess and disclose climate and nature risks.
- Nature-based solutions (NbS) offer powerful opportunities for businesses to adapt to climate change. They support biodiversity and also result in benefits for local communities.
- NbS leverage natural processes to mitigate and/or reduce risks, enhance climate resilience, and deliver economic and other benefits.
- When planned and implemented appropriately, NbS can offer cost-effective ways for businesses to adapt to climate change impacts. NbS can also help companies to build climate resilience by reducing climate risks, securing supply chains and providing economic, market and regulatory benefits.
- Through NbS, companies reduce climate vulnerabilities and generate multiple benefits for their businesses while also unlocking long-term value and providing multiple benefits to society. This helps them to contribute towards global climate, biodiversity and sustainability goals.
- Collaboration between the public sector, private sector and civil society is key to scaling up NbS across business sectors.
- It is essential to take a human rights-based approach (HRBA) and engage all stakeholders to effectively design and implement NbS that deliver a wide range of benefits.
- This brief outlines the potential benefits to businesses of integrating NbS for adaptation into their plans. It also highlights resources that can help them.

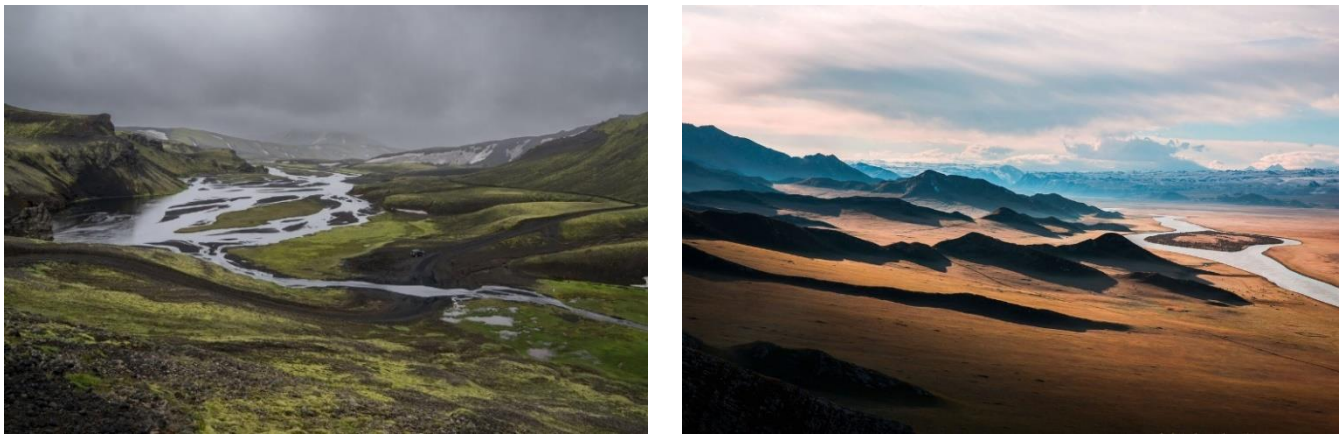

Figure 1: Protecting, conserving, restoring and/or sustainably managing river catchment areas can help companies and communities adapt to the impacts of climate change and make business operations more resilient.

Introduction

Nature underpins the functioning of businesses and society, but it is threatened by the impacts of climate change and other pressures. The global economy is embedded in, and dependent upon, natural and semi-natural ecosystems. According to the World Economic Forum's Nature risk rising report: "*Industries that are highly dependent on nature generate 15% of global GDP ($13 trillion), while moderately dependent industries generate 37% ($31 trillion)*".[1]

Climate change has significant impacts on nature, which can be exacerbated by other pressures like pollution.[2] These impacts are myriad and varied. They can range from subtle changes like the size or location of the habitat of a single species, to large-scale disruptions like the rise of devastating diseases. These impacts are expected to become more common and more severe over time.[2] Climate change also impacts the quantity, quality and timing of inputs into natural systems. For example, climate change will result in some areas experiencing increased rainfall that could lead to flooding, while simultaneously leading other areas to experience drought.[3] In some locations, climate change could lead to an increase in both flooding and drought.[4]

Businesses depend upon nature both directly and indirectly, and in different ways. Some sectors directly extract resources from ecosystems. For example, the fisheries sector takes fish from oceans while the construction sector takes timber from forests.[1] Other sectors are reliant on the ecosystem services that nature provides, such as pollination and water purification services for crops in the agriculture sector.[1] Even sectors without these clear and direct links often have 'hidden dependencies' in their supply chains.[1] For example, energy production and supply (which underpins virtually all other economic activities), depends on natural ecosystems.[5]

The negative impacts that climate change has on nature create a significant risk for businesses. As nature loses its capacity to provide ecosystem services due to climate change and other drivers, many sectors will suffer significant losses. This has the potential to affect the prospects for business success and future prosperity. Climate change mitigation is widely recognized as vital for people, nature and economies. However, as the impacts of climate change are already being felt, many businesses are starting to think about how they can adapt to these impacts. Many adaptation strategies focus on engineered solutions, like flood defences for operational sites. However, integrating nature into adaptation strategies has the potential to result in multiple benefits while simultaneously supporting adaptation.

Nature-based solutions (NbS) offer powerful opportunities for businesses to adapt to climate change while helping to support biodiversity and provide benefits to local communities. For example, by taking actions to restore biodiversity, NbS can improve the adaptive capacity of ecosystems. As biodiverse ecosystems are more resilient to climate change they can more consistently deliver ecosystem services to businesses and societies.[6] For more information on NbS and what they are, see the *Nature-based solutions for climate change adaptation* section below.

There are likely to be significant benefits to implementing and scaling up NbS across business operations and supply chains. This is not only true in economic terms, but true in relation to market share and regulatory compliance. NbS can help businesses meet environmental regulations and sustainability mandates, qualify for access to green financing and improve brand value. By scaling up NbS, businesses can create positive impact for communities and societies. The business opportunities for those committed to restoring natural ecosystems through approaches like NbS can be significant. Conversely, not acting can have serious consequences for business continuity.

An increasing number of guides, information documents and standards are available to help scale up and implement NbS e.g. the IUCN Global Standard for NbS.[6] This brief offers practical guidance and highlights key tools to help understand the benefits of NbS for business resilience and climate change adaptation.

Nature-based solutions for climate change adaptation

There is now a multilaterally agreed definition of NbS that was adopted at the fifth session of the United Nations Environment Assembly (UNEA-5) showing the consensus reached by multiple nations and stakeholders:

"Nature-based solutions are actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits".[7]

The UNEA decision includes guiding paragraphs that help determine whether an action is a NbS or not, including the integral importance of Free Prior Informed Consent (FPIC) and safeguards (see below for more information).

The strategic importance of NbS has been recognized in statements by major intergovernmental conventions, economies, development and environmental organizations, academia and philanthropic donors. For instance, G7 leaders have made various commitments in relation to NbS including increasing "*finance contributions for nature-based solutions through to 2025*" and to "*maximise the synergies of climate and biodiversity finance and promote funding that has co-benefits for climate and nature*".[8] There is increasing emphasis, including through the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification, on NbS as a way to create synergies and contribute towards multiple goals from local to global levels. Business organizations are also recognizing the importance of NbS. For example, the World Economic Forum (WEF) is promoting a change in the way business is done, endorsing the concept of NbS and re-evaluating the role of nature and biodiversity at the heart of sustainable business.[1]

NbS for disaster risk reduction and adaptation to climate change tend to be more cost-effective than conventional engineering solutions.[9] They also have the potential to last longer if they are protected and maintained. Therefore, NbS offer a potentially economically viable opportunity to increase and maintain the diversity of ecosystem services, reduce the impacts of climate change and make business processes more sustainable and economically viable in the long term.[10]

Resources to support businesses to implement NbS for adaptation

There are many resources available to help businesses understand NbS and how they might integrate them into their processes.

Decision support tools can help businesses to assess future climate change risks and prioritize feasible actions that are cost effective and provide benefits for nature and people. These tools also provide businesses with climate and nature data that are critical for decision-making.

For example, the World Business Council for Sustainable Development created a Nature-based Solutions Blueprint for businesses to help them build the case for NbS and a Map to help businesses identify the type of NbS that can best address the challenges and opportunities within their operations and supply chains.[11] The NbS Benefits Explorer (developed as a collaboration between the CEO Water Mandate, the Pacific Institute, The Nature Conservancy and others) helps businesses to carry out NbS benefits identification, accounting and valuation.[12] It has been adopted by Coca Cola to quantify and test

the co-benefits of NbS projects across several water replenishment initiatives.

The Nature Conservancy Coastal Resilience Tool offers planning support and spatial analysis for implementing NbS in coastal environments.[13] Financing mechanisms such as debt-for-nature swaps, climate insurance and carbon markets can unlock finance to support initiatives that build resilience in the private sector.

A list of further resources, where they can be accessed and the potential NbS applications, is provided in Annex 1.

Figure 2 lays out a simple decision tree that aims to help a business build an understanding of NbS and to decide how to integrate them into business processes. The tree provides a guide to the following broad steps:

- Step 1: Become familiar with the definition of NbS, and how to determine if an action is a NbS or not.
- Step 2: Consider the opportunities NbS may present in a specific business context. This would typically involve assessing the dependencies a business has on ecosystem services and how that business is/will be impacted by climate change and environmental degradation now and in the future.
- Step 3: Review the case studies provided below for examples of how companies are applying NbS in real-world contexts.
- Step 4: Explore the resources in Annex 1 to understand how NbS can support adaptation and build the resilience of businesses.
- Step 5: Develop a comprehensive strategy/plan for adaptation that includes NbS, and ensure effective monitoring and evaluation is in place.

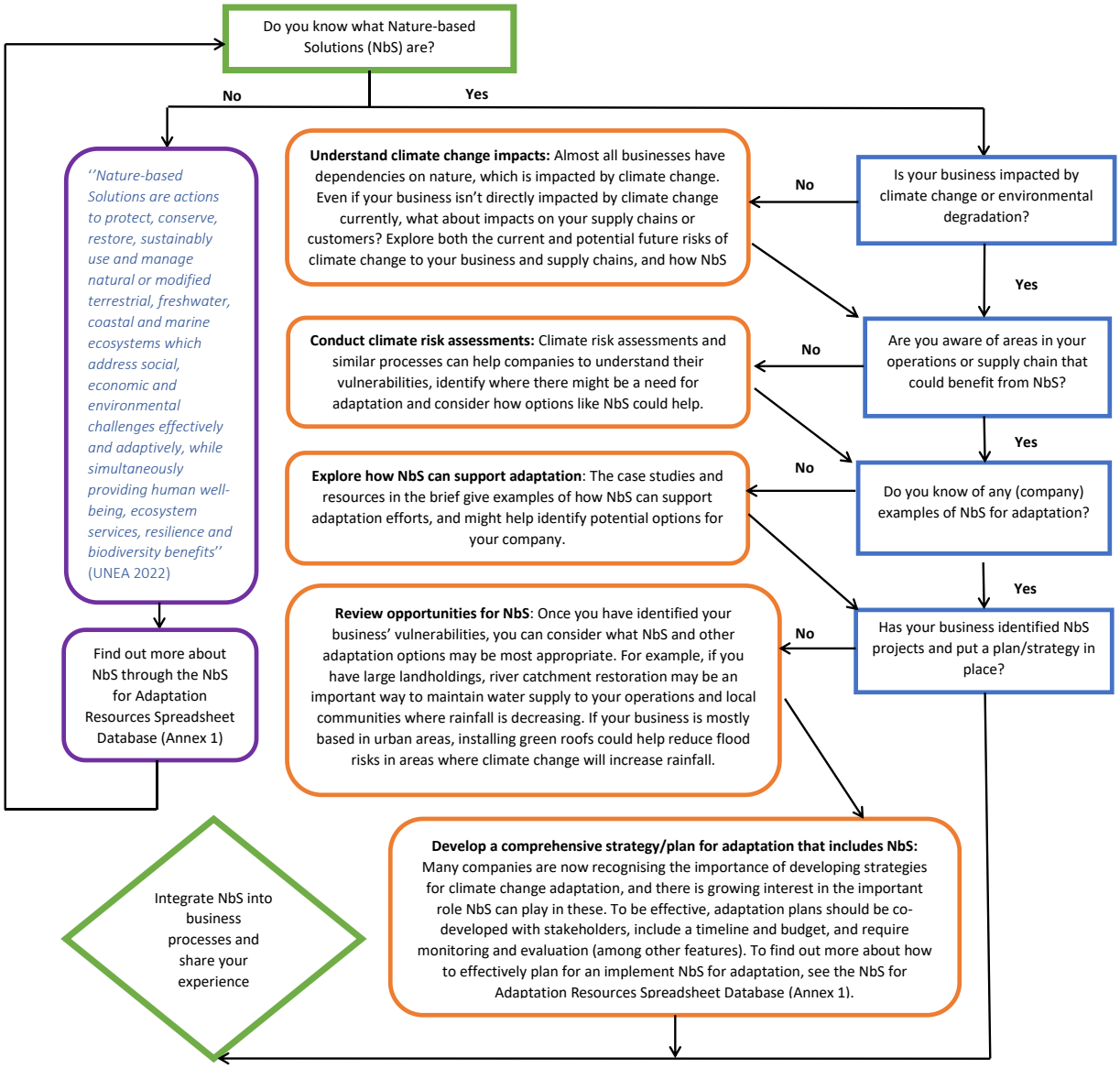

Figure 2: Decision Tree: How businesses can explore Nature-based Solutions for adaptation to climate change.

Environmental and Social Safeguards

NbS can have many benefits for business and society. However, if nature-related actions are not planned and implemented appropriately, they can also lead to negative social and environmental outcomes. For example, strict protection measures can risk excluding local communities from areas that are important to them for economic or cultural reasons. In other cases, reforesting areas using non-native tree species may help store carbon but could compete with nearby crops for water resources or even become invasive.

It is important to be conscious of the potential for trade-offs right at the start of NbS project design, and to ensure relevant 'safeguards' are in place to avoid them. The UNEA-5 resolution on NbS specifically mentions the need to respect environmental and social safeguards for NbS. At a very basic level, safeguards for NbS "*aim to prevent negative impacts and promote positive*

ones", including in relation to land rights, inclusive stakeholder participation, gender responsive design and transparency.[7]

Safeguards are vital for ensuring that NbS meet their aims and prove sustainable over time. For more information, see *Box 3: Safeguards and Standards for NbS* of *Nature-based Solutions: Opportunities and Challenges for Scaling Up*.

Several sources of guidance are available to help reduce negative environmental and social impacts associated with NbS and to increase the positive ones, particularly in relation to safeguarding the land rights and tenure security of Indigenous People and local communities.

For example, the International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability can be applied with NbS projects, as they can for any development.[14] NbS projects affect how land is used. Several of the IFC Performance Standards are applicable to understanding the social implications of land use change decisions, including:

- *"Performance Standard 5: Land Acquisition and Involuntary Resettlement"*
- *"Performance Standard 7: Indigenous Peoples"*
- *"Performance Standard 8: Cultural Heritage"*.[14]

As with other development types, stakeholders should be engaged throughout the lifecycle of NbS projects to consider the perspectives of diverse and affected groups and ensure transparency and accountability. It is particularly important to ensure that vulnerable groups are included in the stakeholder engagement process since large scale interventions can both deliver benefits and have major impacts on them. Free, Prior and Informed Consent (FPIC) is an integral part of what makes an action a NbS, as recognized in the guiding paragraphs of the UNEA definition. The mainstreaming of gender and human rights into NbS is critical for enhancing the social acceptance of NbS and ensuring equitable distribution of potential benefits to communities. This process increases the likelihood of successful NbS projects, that not only increase business resilience but also provide environmental and social co-benefits at local scales.

Examples of how businesses are applying NbS to build resilience

There is a need for more qualitative and quantitative examples highlighting the business case for NbS. As more businesses share results and demonstrate return on investment through NbS, there will be increased motivation to adopt these practices throughout business operations and supply chains.

ArcelorMittal Tubarão Site in Brazil: A green belt for a sustainable future

For nearly four decades ArcelorMittal, Tubarão unit, has worked to create a green area around its facilities in Brazil, aligned with its commitment to environmental preservation. The initiative reinforces sustainability as one of the company's main values.

By planting trees, the initiative seeks to preserve biodiversity, improve the local microclimate, reduce wind speeds, minimize the transportation of airborne particles, and protect urban areas from industrial and noise pollution impacts.

The green belt covers over 700 hectares around the plant, comprising around 2.6 million trees and bushes, with eight Permanent Preservation Areas. These areas include lagoons, swamps, mangroves and beaches, forming a rich and diverse ecosystem.

Today, 41.7% of the site's area is covered by this green belt, which is home to approximately 102 species of fauna and 433 of flora. In the green belt lagoons, there are around 600 broad-snouted caimans, and in the Seawater Return Channel more than 6,000 green turtles have been captured and tagged for monitoring and research.

In addition to its dedication to the environment, ArcelorMittal, Tubarão unit, also focuses on strengthening its relationship with the neighbouring communities through a program called Conectar. This program fosters dialogues on the steel industry and sustainability, involving residents, students from nearby schools and employees, consolidating the company's role as a partner in socioenvironmental development.

Itaipu Binacional: How natural ecosystems support the world's third largest hydroelectric dam[15]

Itaipu hydropower plant was constructed in 1984 and is one of the largest generators of renewable energy in the world, providing 16% of Brazil's electricity mix and 90% of Paraguay's. It is therefore an essential part of the energy infrastructure for both countries. Itaipu Binacional, the organization that manages the dam, recognized that the health of the Paraná watershed is as vital for the operation of the dam as it is for the well-being of nearby communities.

The dam's business model integrates watershed conservation and restoration. These NbS are ensuring the protection and resilience of the dam. Itaipu Binacional has planted over 44 million trees in the areas around the dam – reforesting, restoring, and conserving 101,000 ha of land and 421 micro-watersheds. These natural ecosystems regulate sediment levels in the reservoir and prevents damage to the dam's turbines.

According to a cost-benefit assessment, the natural infrastructure of the dam generated a Net Present Value of US $45,000,000 based on direct financial benefits alone.[16] This case study illustrates the potential cost effectiveness of integrating NbS into business processes and the wider benefits it can deliver for communities and in relation to the environment.

The Coca-Cola Company Water Stewardship Programme[17]

The Coca-Cola Company Water Stewardship Programme relates to action the company has supported in the Ipo Watershed, which supplies water to Metro Manila, the second most populous region of the country.

In the past few years, the watershed has experienced pressures from illegal logging and unsustainable forest practices, resulting in a significant reduction in forest cover from 85% to just 40%. These unsustainable activities have caused a drop in the natural water storage capacity of the river basin.

The Coca-Cola Foundation, Coca-Cola Foundation Philippines, and WWF Philippines worked together to protect rainforests of the area, replant trees and provide livelihood opportunities. They did this by reforesting 165 hectares of degraded land in the watershed and empowering local communities to grow food.

The social return on investment of the project is estimated to be between eleven times and thirty-five times that of the original investment (depending on the valuation method used and assuming the project is maintained for ten years).

LafargeHolcim France Water Management and Flood Prevention[18]

Flooding impacts many parts of the world, including the area in France where LafargeHolcim operates. This impacts both the company (disruption to operations, safety risks, etc) and the surrounding communities.

LafargeHolcim, in collaboration with a local municipality, has created wetlands and rehabilitated an old quarry to help reduce flood risk to its business operations and local communities. These actions have also created new habitat for wildlife and supported ecosystem services like water purification.

Summary

A call to action for businesses

More than ever, there is a huge opportunity for businesses to integrate NbS into their climate change adaptation strategies. As climate risks increase, businesses can shift from reactive measures to proactive and sustainable approaches that harness the benefits of NbS.

The adoption of NbS can protect business operations, supply chains and assets while contributing to international nature and climate goals. This requires integrating consideration of NbS into corporate decision-making processes, investing in natural infrastructure and partnering with stakeholders to promote ecosystem restoration and conservation on the ground.

Leaders across business sectors have a unique opportunity to scale up NbS that address climate risks while promoting multiple social, environmental and economic benefits.

Businesses must act decisively to realize these benefits. Proteus Partners should assess their vulnerabilities to climate and nature-related risks and explore how NbS can help them address these challenges effectively.

Partnership is key – businesses should work with governments, civil society and other private-sector actors to mobilize resources and share knowledge to maximize the impact of NbS. In addition, corporate decision-makers must prioritize capacity building within their organizations, fostering skills and expertise in developing and implementing NbS initiatives.

By taking these crucial steps, businesses can build resilience to climate change impacts, drive innovation and champion more sustainable development practices.

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Annex 1: NbS for Adaptation Resources List

A selection of resources on NbS for Adaptation are presented in the spreadsheet that accompanies this Technical Brief.

The following information is included for each of the resources in the spreadsheet:

- Date of development
- Name
- Description
- Institution(s)
- Type of resource
- Potential applications
- Sectors
- Geographic focus
- Languages
- Supporting documents

This list is not exhaustive, but provides examples of the types of materials, tools and other resources available for organisations interested in adaptation to climate change through NbS. Organisations will need to check the commercial licencing and adhere to any restrictions outlined by the terms of use for these resources.

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Authors: Kollie Tokpah, Katie Dawkins, Rosario Gomez, Cristina Telhado

Acknowledgements: Alex Ross, Stacey Baggaley, Raquel Agra

Available online at: https://www.proteuspartners.org/

Contact: Katie Dawkins (Katie.Dawkins@unep-wcmc.org), Alex Ross (Alex.Ross@unep-wcmc.org)