Comparative Analysis of the Existing Criteria, Principles, and Safeguards for the Implementation of Nature-Based Solutions

BACKGROUND NOTE

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Key Messages

- There are growing demands for criteria, norms, standards, and guidelines to inform the effective implementation of nature-based solutions (NbS). At the international level, there are two existing standards and guidelines that have been reviewed and approved by countries multilaterally and have been applied in various countries, ecosystems and projects—the International Union for Conservation of Nature (IUCN)'s Global Standard for NbS (IUCN, 2020) and the Convention on Biological Diversity's (CBD's) Voluntary Guidelines for the Design and Effective Implementation of Ecosystem-based Approaches for Climate Change Adaptation and Disaster Risk Reduction (CBD, 2019).
- Both the IUCN Global Standard on NbS and CBD's Voluntary Guidelines provide information and guidance on, inter alia, definition(s), principles, safeguards, criteria, indicators, and implementation requirements for countries and practitioners during the design and implementation of NbS measures, albeit with differences. This comparative analysis concludes that both guidance documents are highly compatible with each other and effective in the implementation and scaling up of NbS.
- The IUCN Global Standard and the CBD Voluntary Guidelines align with UNEA Resolution 5/5. Their critical elements include an emphasis on social and environmental safeguards, adaptive management, synergies, and mainstreaming, innovation and research, and contribution to solving societal challenges. The IUCN Global Standard has high-level, yet practical, overarching criteria to serve as an umbrella guidance, whereas the CBD Guidelines provide both high-level guidance and specific, targeted advice, tools, and resources for each stage in project design, planning, implementation, monitoring, and evaluation.
- More clarity is needed to understand what "guidance" is needed for improved implementation of NbS, and how best to transfer global frameworks into local realities.
- Avoiding duplication of work and additional burden should be the priority for any future discussions on NbS. Ample guidance on NbS exists, and resources could be better used to compile existing criteria, norms, standards, and guidelines across different types of NbS and encourage countries to plan and implement NbS in accordance with the most appropriate resource(s) in their policy and project contexts.
- The ongoing and planned review and update of both the IUCN Global Standard and the CBD Voluntary Guidelines could present opportunities for alignment with UNEA Resolution 5/5 and avoid duplication of work under UNEA and UNEP. Member states should take note of the upcoming review of the IUCN Global Standard and the proposed plan for the CBD Secretariat to develop a supplement to the CBD Voluntary Guidelines that would focus on NbS and/or ecosystem-based approaches to climate change mitigation.

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1.0 Introduction

Nature-based solutions (NbS) are "actions to protect, conserve, restore, sustainably use and manage" natural or modified ecosystems to address "social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits" (United Nations Environment Assembly [UNEA], 2022, p. 2). Meanwhile, ecosystem-based adaptation (EbA) is "the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the adverse effects of climate change" (Convention on Biological Diversity [CBD], 2009, p. 6).

Over the years, NbS have become an integral part of countries' climate and biodiversity commitments and strategies. More countries are including NbS in their nationally determined contributions and national adaptation plans (NAPs) to mitigate and adapt to climate change (NbS Initiative, 2022; Seddon et al., 2019; Terton et al., 2024). The Kunming-Montreal Global Biodiversity Framework (KMGBF) under the CBD explicitly references NbS and ecosystem-based approaches in its 2030 Action Targets 8 and 11 related to minimizing the impacts of climate change on biodiversity and increase its resilience and "restore, maintain and enhance nature's contribution to people" (CBD, 2022, p. 10). Countries are starting to update their national biodiversity strategy and action plans (NBSAPs) to align with the new biodiversity goals and targets under the KMGBF (CBD, 2023a).

This growing adoption of NbS has sparked debates about their definition and implementation. Questions arise over what actions qualify as NbS, what safeguards are needed to ensure their outcomes are effective and equitable, and how to prevent their misuse as a form of greenwashing (Kill, 2024; Qi et al., 2021; Seddon et al., 2021). These discussions highlight the need for clear criteria, norms, standards, and guidelines (see Box 1 for their definitions) for their design and implementation to ensure that they deliver genuine social, economic, and environmental benefits while protecting people's rights, and ecological integrity.

At the international level, there are two existing standards and guidelines that have been reviewed and approved by countries multilaterally and have been applied in various countries, ecosystems and projects. One is the International Union for Conservation of Nature (IUCN)'s Global Standard for NbS (IUCN, 2020). The other is the Secretariat for the CBD's Voluntary Guidelines for the Design and Effective Implementation of Ecosystem-based Approaches for Climate Change Adaptation and Disaster Risk Reduction (CBD, 2019). Both provide information and guidance on, inter alia, definition(s), principles, safeguards, and implementation requirements for countries and practitioners during the design and implementation of NbS measures, albeit with differences.

There are growing demands for criteria, norms, standards, and guidelines for NbS implementation (United Nations Environment Programme [UNEP], 2023b; United Nations Environment Assembly Open-ended Committee of Permanent Representatives [UNEA-OECPR], 2023). This policy brief compares the IUCN Global Standard and the CBD Voluntary Guidelines and helps pinpoint the similarities, differences, and gaps, as well as the interrelationships and commonalities between the two guidance documents. Targeted

toward policy-makers and practitioners working on NbS and EbA at the international, national, and local levels, this policy brief hopes to offer insights that will help with the holistic understanding of the available guidance on nature-based solutions and ecosystem-based approaches design and implementation and the selection of the appropriate criteria, norms, standards, and guidelines for project use or for multilateral negotiations.

After a brief introduction to the international policy contexts of NbS (Section 2) and the two guidance documents analyzed in this comparative analysis (Section 3), Section 4 summarizes the key observations from the comparative analysis. Section 5 offers some forward-looking recommendations to governments and practitioners working on NbS.

Box 1. Criterion, standard, and guideline

The UNEP background paper for the intergovernmental consultations on NbS defines the different outputs as follows (UNEP, 2023a, p. 8):

- A **criterion** is a "test, principle, rule, canon, or standard by which anything is judged or estimated."
- A **standard** is a "rule, principle, criterion, or measure by which something can be judged or evaluated."
- A **guideline** is a "principle or general statement that may be regarded as a guide to procedure, policy, interpretation, and actions or decisions that need to be taken."

2.0 International Policy Contexts of NbS

NbS do not represent a novel concept. They have been practised by Indigenous Peoples, local communities,[1] and conservation practitioners before they captured the attention of global policy-makers as tools to help solve three core challenges facing humanity: climate change, biodiversity loss and degradation, and declining human well-being (Melanidis & Hagerman, 2022; Seddon et al., 2020). In 2016, the World Conservation Congress of the IUCN adopted a resolution defining NbS as "actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits" (IUCN, 2016). The resolution also included a set of eight preliminary principles as the foundation of the NbS standard.

Later, the 2019 United Nations Secretary General's Climate Action Summit shone a spotlight on the potential of NbS to help countries reach the 2030 Sustainable Development Goals (UNEP, 2019), and momentum for the concept continued to grow in the 4 years afterwards. In March 2022, UNEA adopted Resolution 5/5, which provided a multilaterally negotiated definition for NbS that is recognized internationally (UNEA, 2022): "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" (UNEA, 2022).

Later that year, countries adopted the new KMGBF that further noted the importance of scaling up NbS actions at the national level to contribute to biodiversity, climate action, and human well-being (CBD, 2022).

At the same time, EbA—a concept that predates the emergence of the NbS concept—has been gaining traction as well. While NbS could be understood as an umbrella concept for ecosystem-based approaches that address a range of societal challenges, "EbA specifically focuses on societal adaptation to climate change, making it a subset of NbS" (CBD, 2019, p. 6; Cohen-Shacham et al., 2019, p. 22; Terton et al., 2024, p. 5). In 2023, the first Global Stocktake under the Paris Agreement and the UAE Framework for Global Climate Resilience urged countries to accelerate the implementation of EbA and/or NbS to "reduce climate impacts on ecosystems and biodiversity" (United Nations Framework Convention on Climate Change, 2023c, para. 63(d)).

Most recently, at UNEA-6 in 2024, Cameroon, on behalf of the African Group, presented a draft resolution on "the development of criteria, norms, standards and guidelines for nature-based solutions to support sustainable development" (UNEA-OECPR, 2023), with the hope to achieve a multilaterally negotiated outcome that would guide the member states' implementation of NbS. However, the question of what existing guidelines may inform the resolution played a central role, and two guidance documents stood out.

[1] NbS have been practiced by Indigenous Peoples and local communities under different terminologies, such as holistic management of ecosystems with worldviews centred on reciprocal relationships with the environment, etc. There are also the additional practices of locally led or community-based adaptation, ecological restoration, and other practices that existed before NbS.

3.0 The Existing Guidance Documents on NbS

Stemming from Resolution 5/5, the UNEA requested UNEP to set up intergovernmental consultations on NbS and further support the implementation of both NbS and the resolution. In 2023, the co-chairs of the intergovernmental consultations, H. E. Mrs. Giovanna Valverde Stark from Costa Rica and Sikeade Egbuwalo from Nigeria, presented their summary report, which emphasizes that there was a broad consensus among member states that standards and criteria are important and can contribute significantly to building a common understanding of NbS (UNEP, 2023b). The report also highlights that the IUCN Global Standard document for NbS is an important resource. Meanwhile, it also noted that some guidelines that do not refer directly to NbS may still be relevant and could be applied to NbS; these include, for example, the CBD Voluntary Guidelines adopted by the CBD COP Decision 14/5.

The IUCN's **Global Standard for NbS** represents a high-level, practical, and user-friendly framework for the verification, design, and scaling up of NbS. With the 2016 NbS definition resolution of the World Conservation Congress, IUCN members established eight preliminary principles, setting criteria for what actions can be characterized as NbS (IUCN, 2016). Given the need to ensure the NbS concept is clearly communicated, understood, and implemented in accordance with the principles (as well as properly differentiated from business-as-usual conservation activities), the IUCN's NbS Group developed a set of guidance and standards of practice to operationalize the NbS definition resolution. The group mapped the eight NbS principles in the 2016 resolution to 13 relevant standards, approaches, and guidelines for ecosystem management frameworks to develop the IUCN standard (IUCN, 2021). After an extensive peer-review process, the Global Standard was launched in 2020 and formally adopted with a majority vote at the World Conservation Congress in Marseille in 2020 (IUCN, 2021).

The CBD's **Voluntary Guidelines for the Design and Effective Implementation of Ecosystem-based Approaches for Climate Change Adaptation and Disaster Risk Reduction** provide guidance on the planning and implementation of EbA and ecosystem-based disaster risk reduction (Eco-DRR). In 2016, parties to the CBD requested the development of these voluntary guidelines seeking to strengthen the linkage between climate adaptation, disaster risk reduction, and biodiversity protection and conservation (CBD, 2016, para. 10). The guidelines were developed under the direction of a technical reference group of experts and practitioners and underwent an extensive peer-review process. The guidelines provide a set of principles, safeguards, and overarching considerations for planning and implementing EbA and Eco-DRR. This high-level guidance is accompanied by a step-by-step approach to design and implement EbA and Eco-DRR, accompanied by a list of tools that can be used under each step, and short briefs on mainstreaming EbA and Eco-DRR across sectors. The Voluntary Guidelines were adopted by parties at CBD COP14 in 2018 (CBD, 2018, para. 1).

4.0 Observations From the Comparative Analysis

The IUCN Global Standard and the CBD Voluntary Guidelines were compared by reviewing both products and their associated documentation and decisions. This paper evaluates them based on several variables, including, among other things, definition, scope, target groups, environmental and social safeguards, key considerations, operationality, acceptance by member states and other stakeholders, and observed gaps. Figure 1 provides a visual representation of the linkages between the principles, criteria, and safeguards outlined in both documents.

Overall, the IUCN Global Standard and the CBD Voluntary Guidelines are both comprehensive and accessible for guiding the design, planning, and implementation of NbS and EbA interventions, albeit with some key differences in scope and operationality. The two guidance documents contain a wealth of information relating to the criteria, standards, and guidelines for the implementation of NbS for sustainable development. Both are targeted toward decision-makers and policy-makers, planners, and practitioners, and a diversity of stakeholders involved in the entire process of NbS planning and implementation. The following subsections detail the similarities and differences between the variables analyzed.

Both the IUCN Global Standard and the CBD Voluntary Guidelines on EbA and Eco-DRR have elements that are similar or comparable. While a number of the principles from both guidance documents are comparable, the eight preliminary principles mentioned in the IUCN World Conservation Congress resolution were not officially part of the IUCN Global Standard, as opposed to the principles contained in the CBD Voluntary Guidelines. At the same time, the criteria of the IUCN Global Standard are similar or comparable to the principles in the CBD Voluntary Guidelines. Figure 1 illustrates these linkages between the IUCN Global Standard's criteria and the CBD Voluntary Guidelines' principles. It also highlights their corresponding principles from the World Conservation Congress resolution and the safeguards in the CBD Voluntary Guideline (listed in the below tables).

Figure 1. Visualization of comparative analysis

LEGEND

Principles mentioned in the World Conservation Congress resolution on NbS

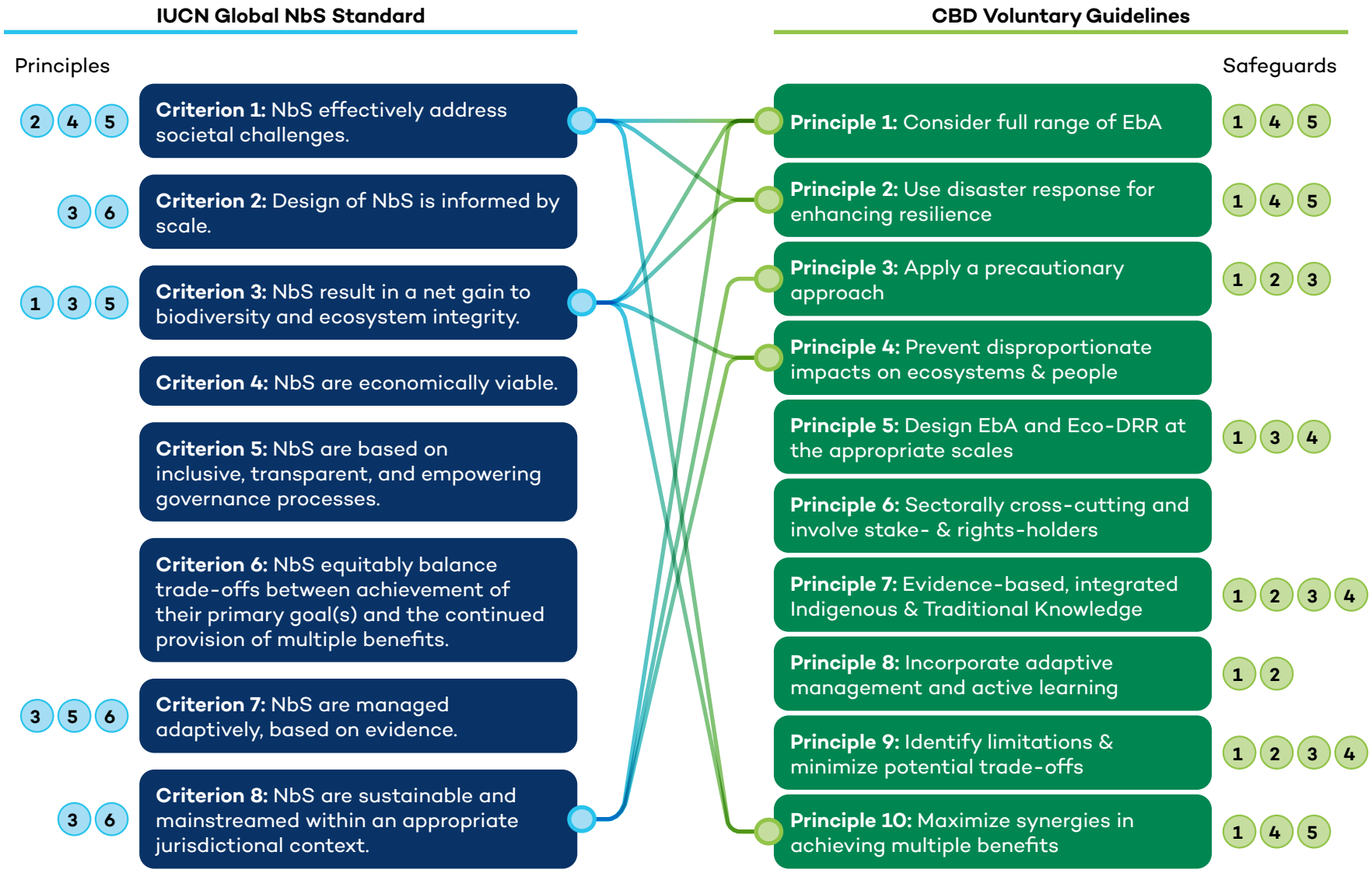
1	NbS embrace nature conservation norms (and principles).
2	NbS can be implemented alone or in an integrated manner with other solutions to societal challenges (e.g., technological and engineering solutions).
3	NbS are determined by site-specific natural and cultural contexts that include Traditional, local, and scientific knowledge.
4	NbS produce societal benefits in a fair and equitable way in a manner that promotes transparency and broad participation.
5	NbS maintain biological and cultural diversity and the ability of ecosystems to evolve over time.
6	NbS are applied at a landscape scale.
7	NbS recognize and address the tradeoffs between the production of a few immediate economic benefits for development and future options for the production of the full range of ecosystems services.
8	NbS are an integral part of the overall design of policies and measures or actions to address a specific challenge.

Safeguards mentioned in the CBD Voluntary Guidelines on EbA and Eco-DRR

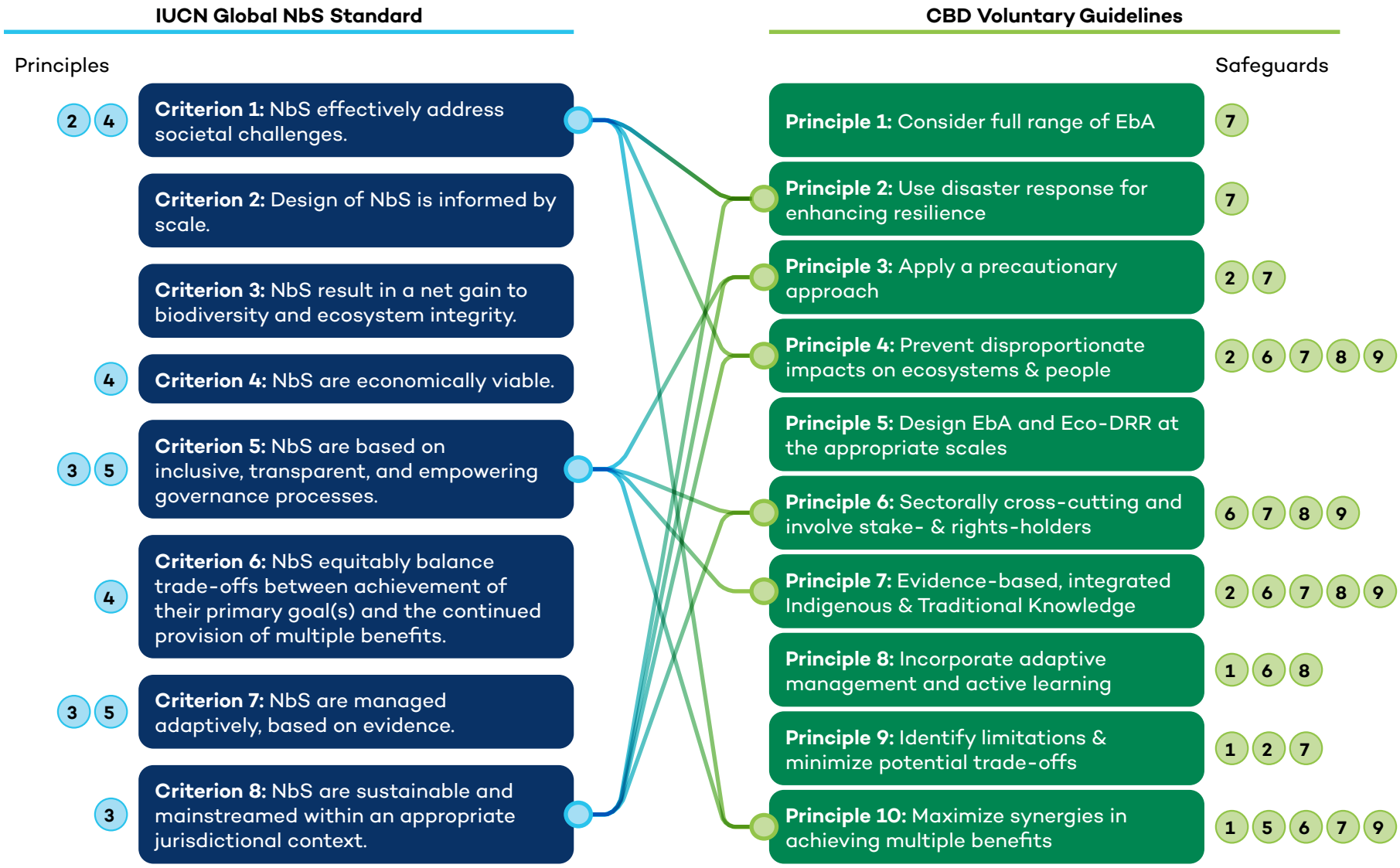
1	Applying environmental impact assessments and robust monitoring and evaluation
2	Prevention of transfer of risks and impacts
3	Prevention of harm to biodiversity, ecosystems, and ecosystem services
4	Promotion and enhancing biodiversity, ecosystem functions, and services
5	Sustainable resource use
6	Promotion of full, effective, and inclusive participation
7	Fair and equitable access to benefits
8	Transparent governance and access to information
9	Respecting rights of Indigenous peoples and local communities

The “principles” contained in the CBD Voluntary Guidelines shown in the below figure are shortened from their original form in CBD (2019) for brevity and clarity. For the full wording of the “principles,” please refer to the original source.

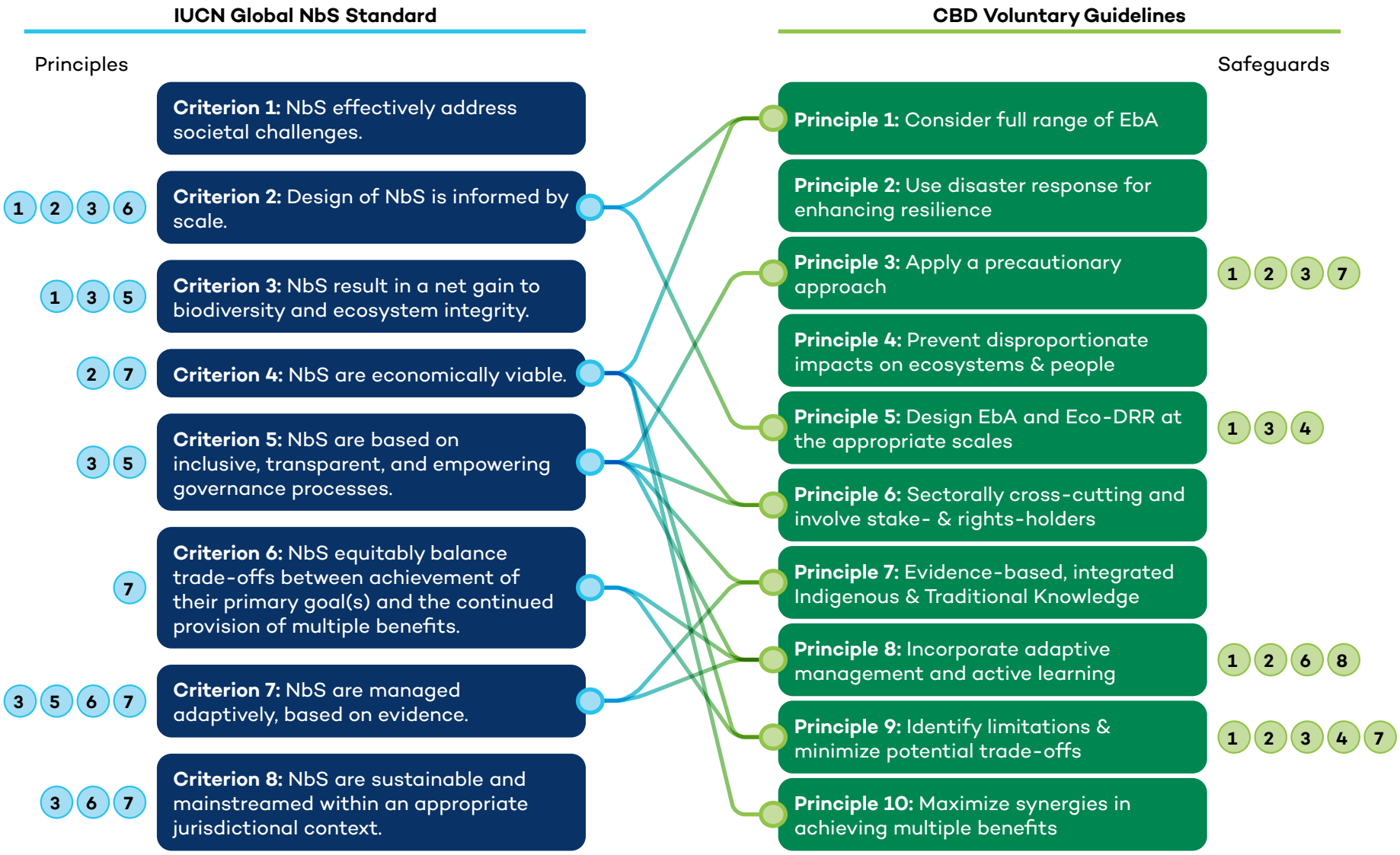
ENVIRONMENTAL CONSIDERATIONS



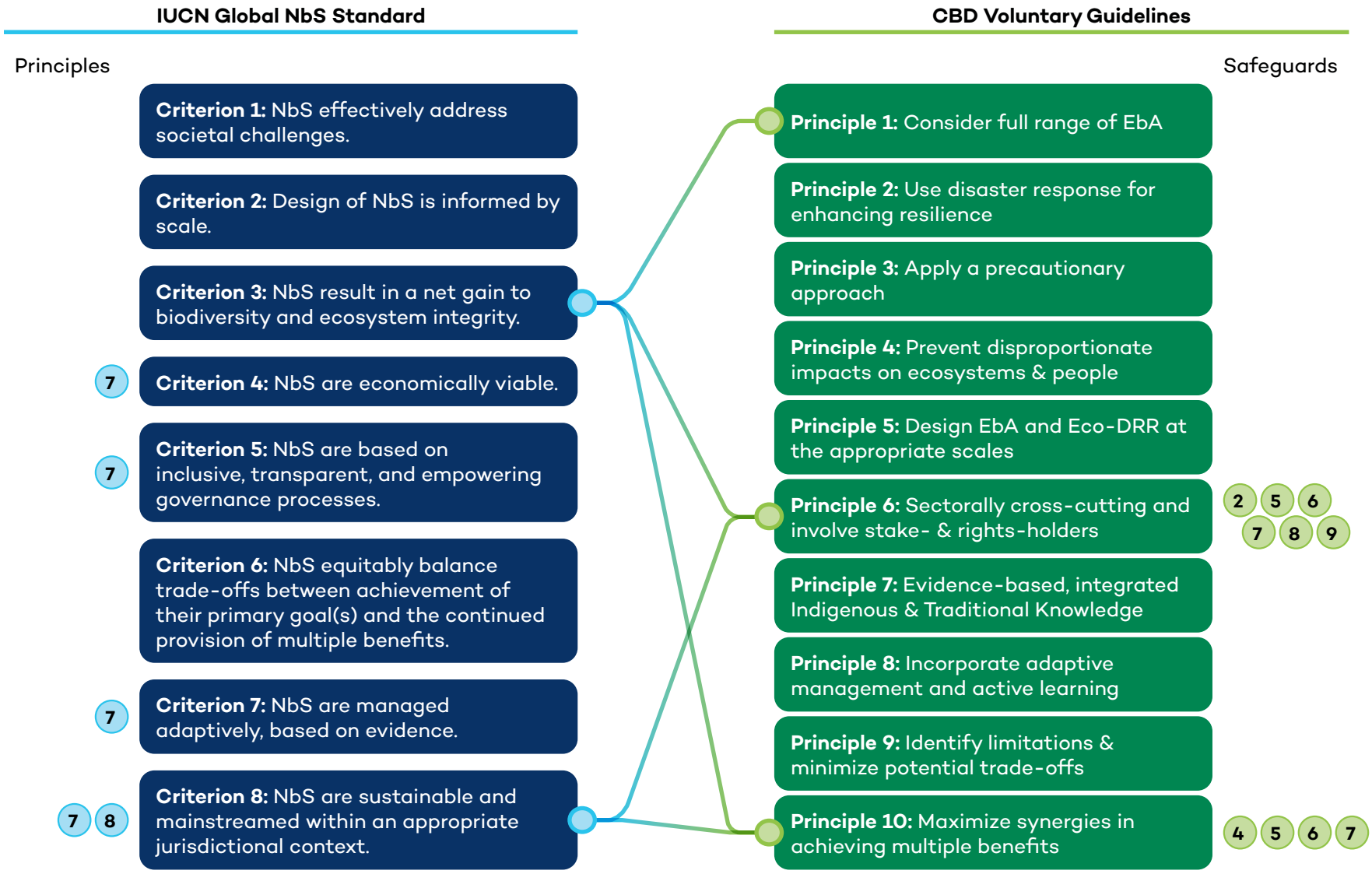
SOCIAL CONSIDERATIONS



PLANNING AND MANAGEMENT APPROACHES



MAINSTREAMING AND CROSS-SECTORAL



Source: Authors.

4.1 Definition and Scope

The definitions of NbS or EbA presented in both guidance documents are compatible with the UNEA definition of NbS. The IUCN Global Standard adopts the definition of NbS in the World Conservation Congress resolution, while the CBD Voluntary Guidelines use the CBD definition for ecosystem approaches (EbA and Eco-DRR) and refer to the IUCN definition for NbS in the glossary.

Due to differences in scope, however, the CBD Voluntary Guidelines focus on EbA and Eco-DRR instead of the broad concept of NbS. While they also refer to NbS and their relation with ecosystem-based approaches, they are primarily designed for the specific two sub-types (i.e., addressing climate and disaster risks) and may not be directly applicable to other types of NbS, such as NbS for climate change mitigation. However, the principles and safeguards are nonetheless transferable to NbS and ecosystem-based approaches in other contexts.

Table 1. Comparison of definition and scope

	IUCN Global NbS Standard	CBD Voluntary Guidelines on EbA and Eco-DRR
Definitions	**NbS** "are actions to protect, sustainably manage, and restore natural and modified ecosystems in ways that address societal challenges effectively and adaptively to provide both human well-being and biodiversity benefits" (IUCN, 2016). "The fundamentals of NbS are **derived from established practices**, such as forest landscape restoration, integrated water resource management, EbA and mitigation, and ecosystem-based disaster risk reduction" (IUCN, 2020). UNEA Resolution 5/5 on the definition of NbS from 2022[2] builds on the IUCN's definition from 2016. The UNEA resolution contains additional qualifiers related to safeguards, Rio Convention and Agenda 2030 synergies, and the wide range of societal, environmental and economic challenges as well as multiple benefits containing ecosystem services and resilience.	**Ecosystem approach:** "Strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way" (CBD, 2019). **EbA** is "the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the adverse effects of climate change. EbA aims to maintain and increase the resilience and reduce the vulnerability of ecosystems and people in the face of the adverse effects of climate change" (CBD, 2019). **Eco-DRR** is "the sustainable management, conservation, and restoration of ecosystems to reduce disaster risk with the aim of achieving sustainable and resilient development" (CBD, 2019).

[2] The UNEA Resolution 5/5/ decides that NbS 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" (UNEA, 2022; additions to the IUCN definition bolded).

	IUCN Global NbS Standard	CBD Voluntary Guidelines on EbA and Eco-DRR
Scope	The Global Standard covers guidance relevant to NbS for a wide range of actions, including climate change mitigation and adaptation, disaster risk reduction, and sustainable resource management. The scope of the societal challenges NbS addresses include, inter alia, climate change, disaster risk reduction, ecosystem degradation and biodiversity loss, food security, human health, social and economic development, and water security.	The Voluntary Guidelines cover guidance relevant to the design and implementation of EbA and Eco-DRR actions. The scope of societal challenges EbA and Eco-DRR address include, inter alia, climate change adaptation, disaster risk reduction, ecosystem management, and socio-economic development planning, in the context of sustainable development.
Target groups	National governments, city and local governments, planners, businesses, donors, and financial institutions, including development banks and non-profit organizations. The guidance provided is applicable to a range of settings, from protected areas to productive landscapes to urban areas, and across different regions and in modified or intact ecosystems. It is also applicable to both large-scale and small-scale interventions.	Policy-makers and implementers, including subnational governments (regions, provinces, cities, and municipalities), Indigenous Peoples and local communities, non-governmental organizations, the private sector, research institutions, and funding agencies. The guidance provided is applicable to different sectors in planning and implementing EbA and Eco-DRR and can be consulted when implementing related practices, such as community-based adaptation and public works programs with an ecosystem focus. Practical sector briefs are provided for the following sectors: finance and development, agriculture, forestry, humanitarian aid, disaster relief, water management, construction, health, and other fields.

Source: CBD, 2019; IUCN, 2016; IUCN, 2020.

4.2 Benefits

Both guidance documents emphasize that NbS should aim to address societal challenges effectively and provide benefits to people and ecosystems. They also highlight the potential for NbS to yield multiple benefits and co-benefits for different stakeholders and sectors. The CBD Voluntary Guidelines have a stronger focus on EbA and Eco-DRR, helping people and ecosystems build adaptive capacity and increase resilience in the face of increasing climate

change impacts. The IUCN Global Standard emphasizes that NbS interventions should lead to a net gain in biodiversity and ecosystem integrity.

Table 2. Comparison of acknowledgment of benefits

IUCN Global NbS Standard	CBD Voluntary Guidelines on EbA and Eco-DRR
NbS should **address societal challenges effectively and adaptively** to provide both human well-being and biodiversity benefits, where rights holders and beneficiaries are prioritized. They should result in a net gain to biodiversity and ecosystem integrity. They also have the potential to yield multiple benefits for different stakeholders and sectors.	"EbA, Eco-DRR, and related ecosystem approaches contribute to the well-being of societies, including Indigenous Peoples and local communities. They enhance resilience and adaptive capacity and reduce social and environmental vulnerabilities in the face of the risks associated with climate change impacts, contributing to incremental and transformative adaptation and disaster risk reduction. They generate societal benefits, contributing to sustainable and resilient development." They can **provide multiple benefits for people, nature, and economies** and can help maximize synergies in achieving co-benefits for various sectors.
Reference criteria: 1 (Societal challenges), 3 (Biodiversity net-gain), & 4 (Economic feasibility) **Reference principles:** Definition, 4 (Transparency and participation) & 5 (Maintain biological and cultural diversity)	**Reference principles:** Definition, 1, 2 (Building resilience and adaptive capacity), 4 (Inclusivity and equity), 9, & 10 (effectiveness and efficiency)

Source: CBD, 2019; IUCN, 2020.

4.3 Environmental Considerations

Both guidance documents contain many principles and other material related to environmental considerations. They both emphasize the importance of NbS interventions maintaining and enhancing biodiversity and ecosystem services as well as identifying and monitoring unintended adverse consequences resulting from implementation. Both documents also highlight that local knowledge and scientific understandings should be used whenever possible and underscore the importance of using diverse knowledge systems to inform planning and implementation. The CBD Voluntary Guidelines are more detailed on these considerations than the IUCN Global Standard—they include step-by-step guidance, a key activities list, suggested resources and toolboxes, and case studies on vulnerability and risk assessment and environmental impact assessment, partly due to their strong focus on adaptation and climate vulnerability and risk assessments.

Table 3. Comparison of environmental considerations

IUCN Global NbS Standard	CBD Voluntary Guidelines on EbA and Eco-DRR
NbS should embrace nature conservation norms and principles and be designed by site-specific natural contexts. They should be applied at a **landscape scale** and maintain biodiversity and the ecosystems' ability to evolve over time. **Risk identification and management strategy at and beyond the intervention site** and monitor unintended adverse consequences on nature are required. NbS actions should directly respond to evidence-based assessment of the current state of the ecosystem and prevailing drivers of degradation and loss; they should also establish **monitoring and evaluation systems** to identify, benchmark, and assess clear and measurable biodiversity outcomes. Both local knowledge and scientific understanding should be used whenever possible. Adaptive management of NbS will also help safeguard biodiversity and ecosystem integrity.	EbA and Eco-DRR's planning and implementation should follow a **precautionary approach** and identify and assess limitations and minimize potential trade-offs. They should also be **designed and delivered at the appropriate scales**. EbA and Eco-DRR interventions should be evidence-based and integrate Indigenous and Traditional Knowledge (where available) supported by the best available science and diverse knowledge systems. Specific safeguards include applying environmental impact assessments at the earliest stages of project design and robust monitoring and evaluation systems; preventing the transfer of risks and impacts; avoiding degradation of natural habitats, loss of biodiversity, the introduction of invasive species, and the creation or exacerbation of vulnerabilities to future disasters; promoting and enhancing biodiversity and ecosystem functions and services; and aiming for sustainable resource use while not enhancing the drivers of climate change and disaster risks. These principles and safeguards apply to all stages of project design (understanding the social–ecological system, assessing vulnerabilities and risks, identifying EbA and Eco-DRR options, prioritizing, appraising and selecting EbA and Eco-DRR options, project design and implementation, and **monitoring and evaluation** of EbA and Eco-DRR).
Reference criteria: 2 (Design at scale), 3 (Biodiversity net-gain), & 7 (Adaptive management) **Reference principles:** 1 (Norms and principles), 3 Natural and cultural context), 5 (Biological and cultural diversity), & 6 (Landscape scale)	**Reference principles:** Definition, 1, 2 (Building resilience and adaptive capacity), 4 (Inclusivity and equity), 9, & 10 (effectiveness and efficiency) **Reference safeguards:** 1 (Environmental Assessment), 2 (Risks and impacts), 3 & 4 (Prevention of harm), 5 (Sustainable resource use) **Reference stepwise guidance:** A (Understanding the social-ecological system), B (Assessing Vulnerabilities and Risks), C (Identifying EbA/Eco-DRR options), D (Prioritizing, appraising & selecting options), E (Project design), F (Evaluating Outcomes)

Source: CBD, 2019; IUCN, 2020.

4.4 Social Considerations

Both guidance documents noted the importance of social considerations during the design and implementation of NbS interventions. They emphasize that approaches that are inclusive,

transparent, empowering, cross-cutting, and collaborative lead to a more equitable and fair distribution of benefits. It is necessary to pay particular attention to the most vulnerable stakeholders and rights holders, such as Indigenous Peoples and local communities. Both guidance documents noted the importance of obtaining free, prior, and informed consent from Indigenous Peoples and local communities before and throughout the design and implementation stages.

Table 4. Comparison of social safeguards

IUCN Global NbS Standard	CBD Voluntary Guidelines on EbA and Eco-DRR
NbS should be designed by **considering site-specific cultural contexts** and produce societal benefits in a fair and equitable way while promoting transparency and broad participation. They should help maintain the cultural diversity at or near the intervention sites. NbS design should be based on **inclusive, transparent, and empowering governance processes** and clearly document the direct and indirect beneficiaries. Participation in NbS design and implementation should be based on mutual respect and equality and uphold the right of Indigenous Peoples to free, prior, and informed consent.	EbA and Eco-DRR interventions help ecosystems and vulnerable groups prevent and avoid the disproportionate impacts of climate change and disaster risks. They should be designed and implemented in a cross-cutting manner that involves collaboration, coordination, and cooperation of stakeholders and rights holders and should identify and assess limitations and minimize potential trade-offs. Specific safeguards include applying **social and cultural assessments** as part of the overall impact assessment and employing robust monitoring and evaluation (M&E) systems; preventing the transfer of risks and impacts from one group to another; **promoting full, effective and inclusive participation**; promoting fair and equitable access to benefits; promoting transparent governance and access to information; and respecting the rights of women and men from Indigenous Peoples and local communities. These principles and safeguards apply to all stages of project design, with the integration of knowledge, technologies, practices, and efforts of Indigenous Peoples and local communities as an overarching consideration.
Reference criteria: 1 (Societal challenges), 4 (Economic feasibility), & 5 (Inclusive governance) **Reference principles:** 3 (Natural and cultural context), 4 (transparency & participation), & 5 (Biological and cultural diversity)	**Reference principles:** 4 (Inclusivity and equity), 6 (Multiple scales), & 9 (Effectiveness and efficiency) **Reference safeguards:** 1 (Environmental assessment), 2 (Risks and impacts), 6 (Inclusive participation), 7 (Equitable access), 8 (Governance), & 9 (Rights-based approach) **Reference overarching consideration:** 1 (Integrating knowledge, technologies, practices and efforts of indigenous peoples and local communities) **Reference stepwise guidance:** A (Understanding the social-ecological system), B (Assessing vulnerabilities and risks), C (Identifying EbA/Eco-DRR options), D (Prioritizing, appraising & selecting options), E (Project design), F (Evaluating outcomes)

Source: CBD, 2019; IUCN, 2020.

4.5 Adaptive Management and Monitoring and Evaluation

Both guidance documents emphasize the importance of adaptive management and provide criteria and guidelines on what M&E systems are needed for NbS projects. However, the CBD Voluntary Guidelines provide more detailed step-by-step guidance on M&E for EbA and Eco-DRR projects and emphasize the learning aspects.

Table 5. Comparison of adaptive management and monitoring and evaluation

IUCN Global NbS Standard	CBD Voluntary Guidelines on EbA and Eco-DRR
NbS should maintain biological and cultural diversity and the ability of ecosystems to evolve over time. They should be **managed adaptively** based on evidence. An NbS strategy should be established and used as a basis for informing the M&E plan and its implementation. A framework of iterative learning that enables adaptive management should be applied throughout the intervention life cycle. Clear and measurable conservation outcomes for both biodiversity and human well-being should be identified, benchmarked, and periodically assessed.	EbA and Eco-DRR design and implementation should incorporate mechanisms that facilitate **adaptive management** and active learning, including continuous M&E at all stages. Environmental, social and cultural assessments should be done at the earliest stages of project design. The EbA intervention should be subjected to robust M&E systems.
Reference criteria: 1 (societal challenges), 3 (Biodiversity net-gain), 4 (Economic feasibility), & 7 (Adaptive management) **Reference principles:** 1 (Norms and principles) & 5 (Inclusive governance)	**Reference principles:** 8 (Effectiveness and efficiency) **Reference safeguards:** 1 (Environmental assessment) **Reference stepwise guidance:** F (Evaluating outcomes)

Source: CBD, 2019; IUCN, 2020.

4.6 Mainstreaming

Both guidance documents emphasize the importance of maximizing synergies by implementing NbS in an integrated and sectorally cross-cutting manner. They also emphasize the importance of mainstreaming into wider systems, policies, sectors, and jurisdictions. The CBD Voluntary Guidelines provide a much more detailed mainstreaming framework for EbA and Eco-DRR across decision-making processes and sectors.

Table 6. Comparison of mainstreaming

IUCN Global NbS Standard	CBD Voluntary Guidelines on EbA and Eco-DRR
NbS can be implemented alone or in an integrated manner with other solutions to societal challenges, and they should **be made as an integral part of the overall design of policies**, and measures or actions, to address a specific challenge. The design of NbS should be integrated with other complementary interventions and **seek synergies across sectors**. They should be sustainable and mainstreamed within an appropriate jurisdictional context.	Ecosystem considerations should be integrated throughout all stages of disaster management. EbA and Eco-DRR interventions should be **sectorally cross-cutting to maximize synergies in achieving multiple benefits**, including for biodiversity, conservation, sustainable development, gender equality, health, adaptation, and risk reduction. These principles apply to all steps when designing and implementing effective EbA and Eco-DRR, with two overarching considerations: **mainstreaming EbA and Eco-DRR** and raising awareness and building capacity.
Reference criteria: 2 (Design at scale) & 8 (Mainstreaming and sustainability) **Reference principles:** 2 (Integrated implementation) & 8 (Part of overall design)	**Reference principle:** 2 (Building resilience and adaptive capacity), 6 (Multiple scales), & 10 (Effectiveness and efficiency) **Reference overarching considerations:** 2 (Mainstreaming EbA and Eco-DRR), 3 (Raising awareness and building capacity) **Reference stepwise guidance:** A (Understanding the social-ecological system), B (Assessing vulnerabilities and risks), C (Identifying EbA/Eco-DRR options), D (Prioritizing, appraising & selecting options), E (Project design), F (Evaluating outcomes)

Source: CBD, 2019; IUCN, 2020.

4.7 Operationality

Both guidance documents are accessible to their target audience. The IUCN Global Standard contains a set of criteria with indicators and case studies to support the verification, design, and scaling up of NbS. The CBD Voluntary Guidelines are more comprehensive and include step-by-step guidance on planning and implementation, as well as practical sector briefs and examples. The two documents have different aims and scopes and, thus, are not directly comparable in operationality.

Table 7. Comparison of operationality

IUCN Global NbS Standard	CBD Voluntary Guidelines on EbA and Eco-DRR
The Global Standard is based on a set of principles and contain criteria, guidance, and indicators, as well as case studies, to support the verification, design, and scaling up of NbS. However, it needs to be referenced with other step-by-step guidance to support the planning and implementation of NbS interventions.	The Voluntary Guidelines contain principles, safeguards, overarching considerations during planning and implementation, and an iterative step-by-step process for planning and implementing EbA and Eco-DRR in one document. They also provide case studies, examples, and sectoral opportunity deep dives. However, they primarily cover EbA and Eco-DRR interventions but may also potentially be applicable to other types of NbS.

Source: CBD, 2019; IUCN, 2020.

4.8 Acceptance by Member States

The IUCN Global Standard was approved by IUCN members at the World Conservation Congress in Marseille 2020 after a majority vote, with 128 state and subnational government members voting "yes," 6 voting "no," and 8 abstentions (IUCN, 2021). The CBD Voluntary Guidelines were mandated by parties to the CBD through Decision 13/4 and were subsequently endorsed and adopted by 196 parties through Decision 14/5 (CBD, 2016, 2018). However, it is important to note that 85 UN member states are part of the IUCN as state members (with the majority being developed countries), while almost all UN member states (with the exception of the United States and the Holy See) are parties to the CBD.

Table 8. Comparison of acceptance by member states

IUCN Global NbS Standard	CBD Voluntary Guidelines on EbA and Eco-DRR
The Global Standard was approved by IUCN members at the World Conservation Congress in Marseille in 2020. Motion 073 ("Promotion of the IUCN Global Standard for Nature-based Solutions") was adopted after a majority vote, with 128 state and subnational government members voting "yes," 6 voting "no," and 8 abstentions. In total, 85 UN member states are part of the IUCN as state members.	The Voluntary Guidelines were mandated by parties to the CBD through Decision 13/4 and were subsequently endorsed and adopted by parties through Decision 14/5. Almost all UN member states and observer states are Parties to the CBD, except for the United States and the Holy See.

Source: CBD, 2019; IUCN, 2020.

4.9 Observed Gaps/Differences

The IUCN Global Standard is not set up as a step-by-step guidance document for the planning and implementation of NbS interventions. Instead, it presents a set of high-level criteria and guidelines to support the design and verification of NbS interventions. Thus, it currently does not contain specific guidance on how to plan an NbS intervention or project with the criteria in mind, nor does it provide more granular sectoral examples and deep dives for specific circumstances. On the other hand, the CBD Voluntary Guidelines focus on EbA and Eco-DRR, not all types of NbS, but they are still relevant to other types of NbS (such as NbS for food and water security or human health) given the overlaps of these societal goals with adaptation.

Table 9. Comparison of gaps and differences

IUCN Global NbS Standard	CBD Voluntary Guidelines on EbA and Eco-DRR
The Global Standard is not set up as a step-by-step guidance document for the planning and implementation of NbS interventions. Instead, it presents a set of criteria and guidelines to support the design and verification of NbS interventions. Thus, it does not contain specific guidance on how to plan an NbS project with the criteria in mind, nor does it provide more granular sectoral examples and deep dives for specific circumstances.	The Voluntary Guidelines focus on guidance for EbA and Eco-DRR project planning and implementation; however, they are potentially applicable for other types of NbS.

Source: CBD, 2019; IUCN, 2020.

5.0 Recommendations

Both guidance documents are highly compatible with each other and effective in the implementation and scaling up of NbS. The IUCN Global Standard and the CBD Voluntary Guidelines align with UNEA Resolution 5/5. Their critical elements include an emphasis on social and environmental safeguards, adaptive management, synergies, and mainstreaming, innovation and research, and contribution to solving societal challenges. The IUCN Global Standard has high-level, overarching criteria to serve as an umbrella guidance for a wide range of different NbS, whereas the CBD Guidelines provide both high-level guidance and specific, targeted advice, tools, and resources for each stage in project planning, implementation, and design. For future discussion regarding criteria, norms, standards, and guidelines for NbS implementation, both existing guidance documents should be considered, based on (and integrating) existing guidance documents rather than new sets of guidelines.

Criteria, norms, standards, and guidelines have different legal statuses and different levels of applicability. More clarity is needed to understand what "guidance" is needed for improved implementation of NbS and avoidance of "greenwashing" of adverse environmental and social impacts, and how best to transfer global frameworks into local realities. With different legal implications, it is also important for member states to consider what is appropriate and realistic for international multilateral fora like UNEA to produce (e.g., norms and principles are legal frameworks that multilateral bodies could potentially produce, whereas guidelines are rather technical and may be more suitable for policy-makers, planners, and practitioners to be used in specific contexts based on their local realities) in order to better define the scope of negotiation and the future work prescribed.

Different countries and practitioners should have the flexibility to employ the criteria, norms, standards, and guidelines for NbS implementation that best suit their circumstances and local realities as long as they align with UNEA Resolution 5/5. Aside from the IUCN Global Standard and the CBD Voluntary Guidelines, there are other global criteria, norms, standards, and guidelines (e.g., Making Ecosystem-based Adaptation Effective: Framework for Defining Qualification Criteria and Quality Standards (FEBA, 2017); Evaluating the Impact of Nature-Based Solutions: A Handbook for Practitioners (EC, 2021)) that have been developed by different organizations, processes, and stakeholders. These existing products have different levels of acceptance by different countries and stakeholders, as well as different focus areas and scopes. Countries and stakeholders should apply the most appropriate criteria, norms, standards, and guidelines within their policy and project contexts in line with UNEA Resolution 5/5 on the definition and framing of NbS so that they can be implemented in accordance with local, national, and regional circumstances and managed adaptively.

Having a flexible and inclusive approach to the criteria, norms, standards, and guidelines for NbS implementation could help with the uptake and scaling up of NbS/EbA and move from the definition debate into implementation. A mandate on producing a set of multilaterally negotiated criteria, norms, standards, and guidelines could reopen the debate on the qualification of NbS, contrary to the spirit of moving from the definition debate into implementation. Ensuring flexibility and inclusivity of different criteria, norms, standards,

and guidelines that are compatible with the definition and qualifications set forth in UNEA Resolution 5/5 could allow more stakeholders to understand and implement NbS.

Avoiding duplication of work and additional burden should be the priority for any future discussions on NbS. Ample guidance on NbS exists, and resources could be better used on compiling existing criteria, norms, standards, and guidelines across different types of NbS and encourage countries to plan and implement NbS in accordance with the most appropriate resource(s) in their policy and project contexts.

The ongoing and planned review and update of both the IUCN Global Standard and the CBD Voluntary Guidelines could present opportunities for alignment with UNEA Resolution 5/5 and avoid duplication of work under UNEA and UNEP. Member states should take note of the ongoing review of the IUCN Global Standard and the proposed plan for the CBD Secretariat to develop a supplement to the CBD Voluntary Guidelines that would focus on NbS and/or ecosystem-based approaches to climate change mitigation (CBD, 2023b).

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