Nature-based Solutions:
From Concept Definition to Global Standard

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Contents

- **Evolution** of **Nature-based Solutions (NbS)**
- IUCN's **conceptual & definitional** frameworks for NbS
- Work on NbS **principles**
- **Examples** of NbS
- **Global standard** for NbS

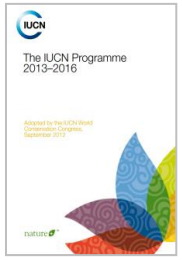
Evolution of Nature-based Solutions

Definitional framework

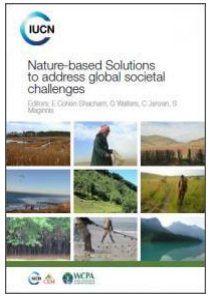
Operational framework

Use of the term

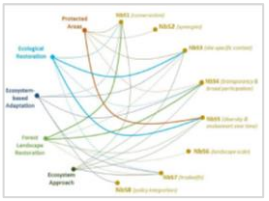
NbS - 1/3 of IUCN's Global Programme



Resolution 069 &

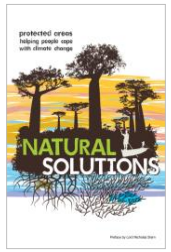


Work on NbS principles



Global Standard for NbS

2002 … | 2010 … | WCC2012 2013 | 2014 | 2015 | WCC2016 2016 | 2017 | 2018 | 2019 | 2020 | WCC2021



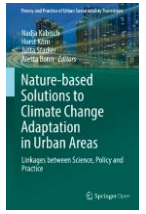
biodiversa

NbS at core of EU Research & Innovation Programme

NBS2017 NATURE-BASED SOLUTIONS From innovation to common use

oppla

thinknature



NATURE-BASED SOLUTIONS INITIATIVE

NbS DIGITAL DIALOGUES

Convention on Biolo

Global Biodiversity Outlook 5

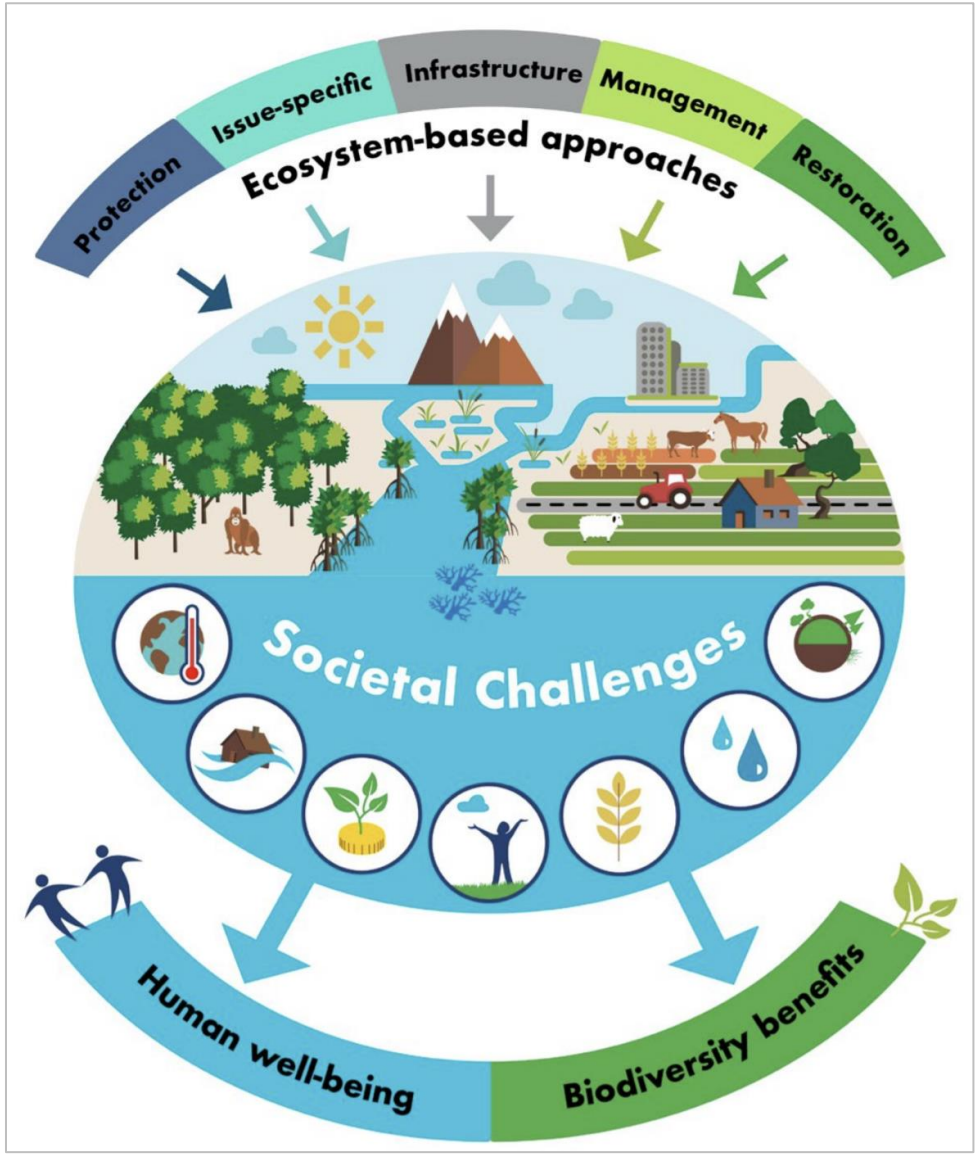
Scientific literature

IUCN Resolution 069 – Defining Nature-based Solutions

Nature-based Solutions Definition:

"**Actions** to **protect, manage and restore natural or modified ecosystems**, which **address societal challenges**, **effectively and adaptively**, providing **human well-being** and **biodiversity benefits**".

**Societal challenges: climate change, natural disasters, social and economic development, human health, food security, water security, ecosystem degradation and biodiversity loss.*



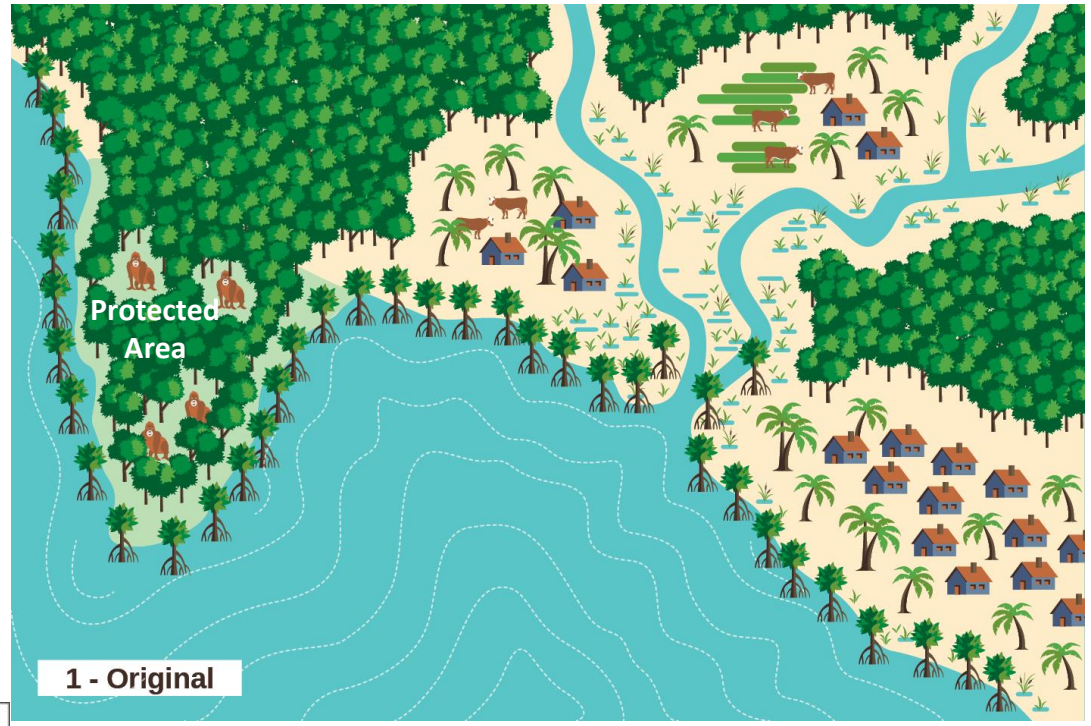
IUCN Resolution 069 – Principles for NbS

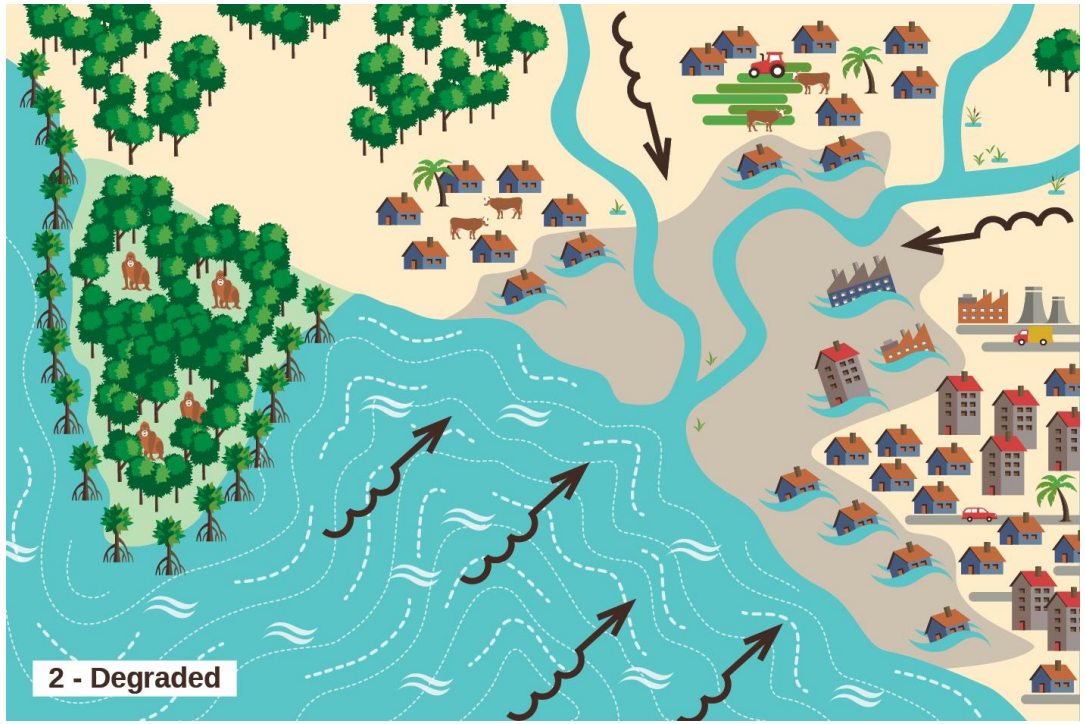
Preliminary principles for Nature-based Solutions

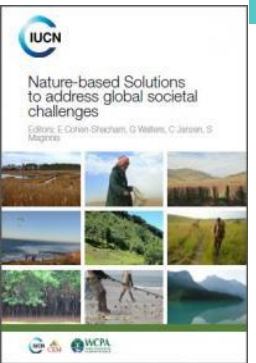
Nature-based Solutions:

1. **Embrace nature conservation**
2. Can be implemented with **other solutions to societal challenges**
3. Are determined by **site-specific natural and cultural contexts**
4. Produce **societal benefits** in a fair and equitable way
5. Maintain **biological and cultural diversity**
6. Are applied at a **landscape scale**
7. Recognise and address the **trade-offs between immediate economic benefits** for development, and future production of ecosystems services
8. Are an **integral part of the overall design**

NbS complementary with other types of actions: infrastructure development & protected area conservation







Protected Area

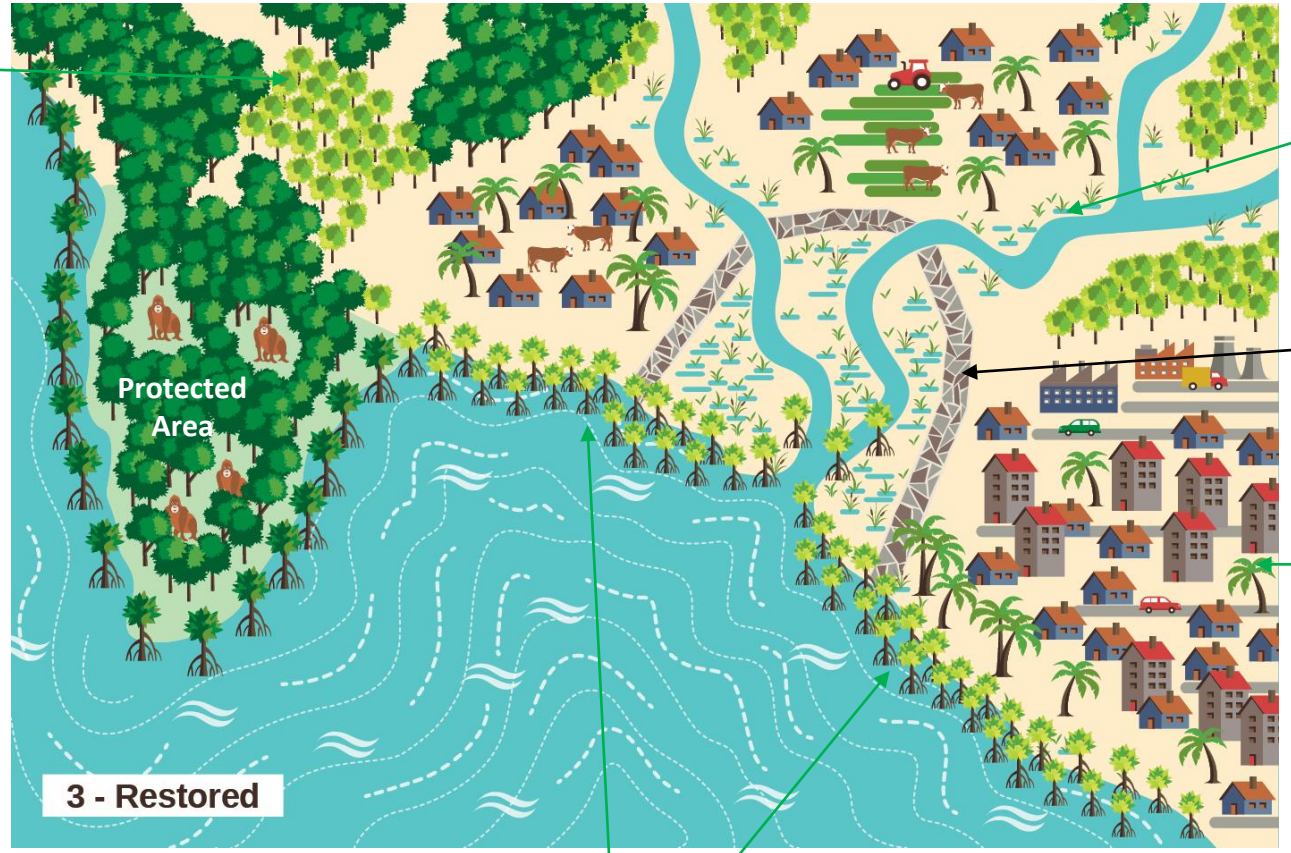
Flooded Area

Increased Pressure

Restored mangroves

Restored forest

NbS complementary with other types of actions: infrastructure development & protected area conservation



Riparian, wetland, urban

ER
Eco-DRR
EbMgt

Coastal wetland

ER
Eco-DRR
AbC

Coastal, wetland

ER
Eco-DRR
EE
NI
EbA
AbC

Urban

GI

Wetland, agricultural

ER
Eco-DRR

NI
ER
FLR
Eco-DRR
EbA

Rural, mountain, freshwater ecosystem, river, watershed

Drylands, rangelands

EbA
EbMgt

ER
FLR
EbM

Coastal (estuary), mangrove forest

Tropical rain forest

ER
EbA
EbMgt

Forest

FLR
ER
EbM

NbS as umbrella for different types concepts

1. Ecosystem protection approaches

AbC

2. Issue-specific ecosystem-related approaches

EbA EbM Eco-DRR

3. Infrastructure-related approaches

GI NI

4. Ecosystem-based management approaches

EbMgt

5. Ecosystem restoration approaches

ER EE FLR

Cohen-Shacham et al., 2016

Links between NbS principles and principles in 5 frameworks

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journal homepage: www.elsevier.com/locate/envsci

Core principles for successfully implementing and upscaling Nature-based Solutions

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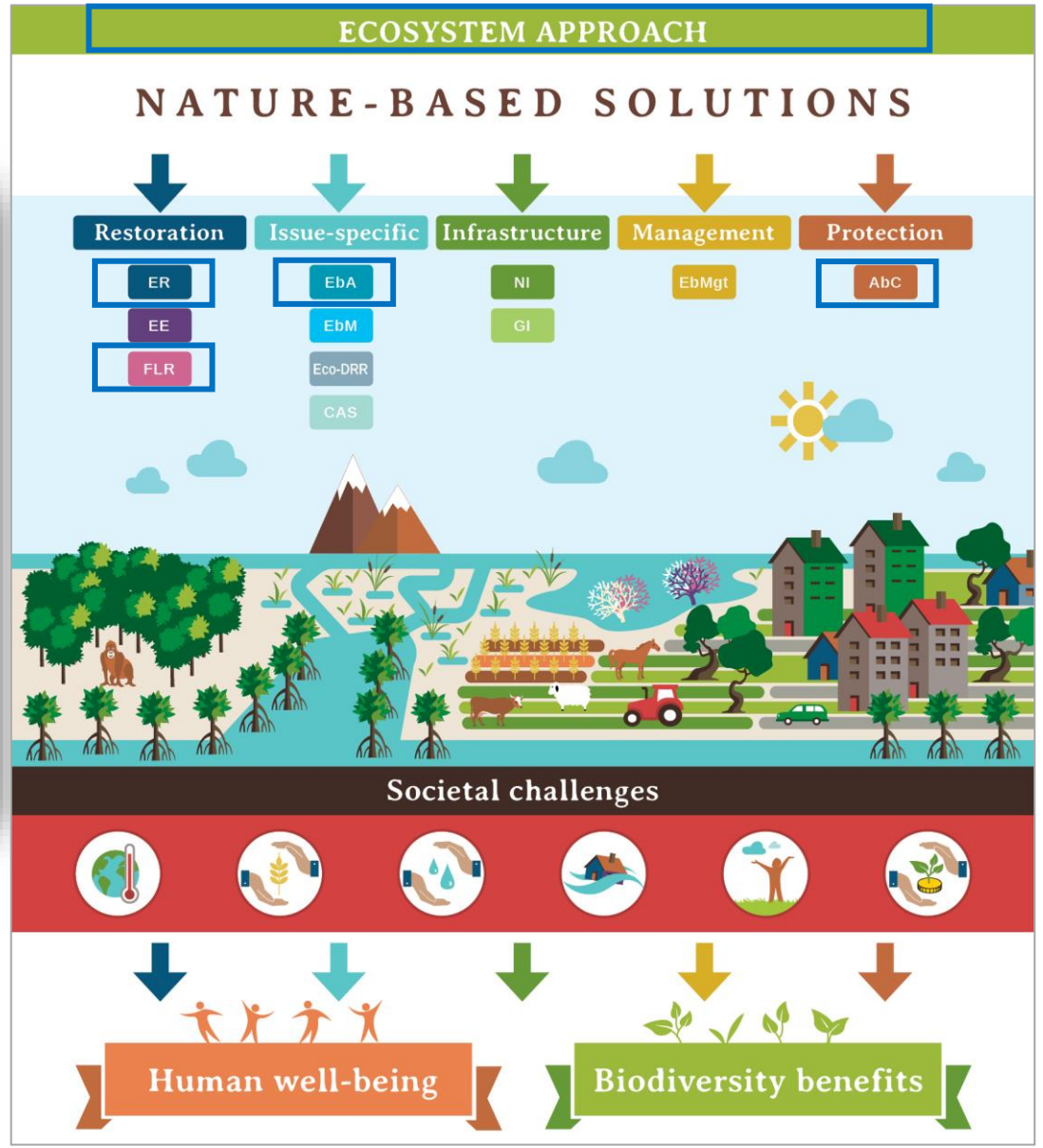
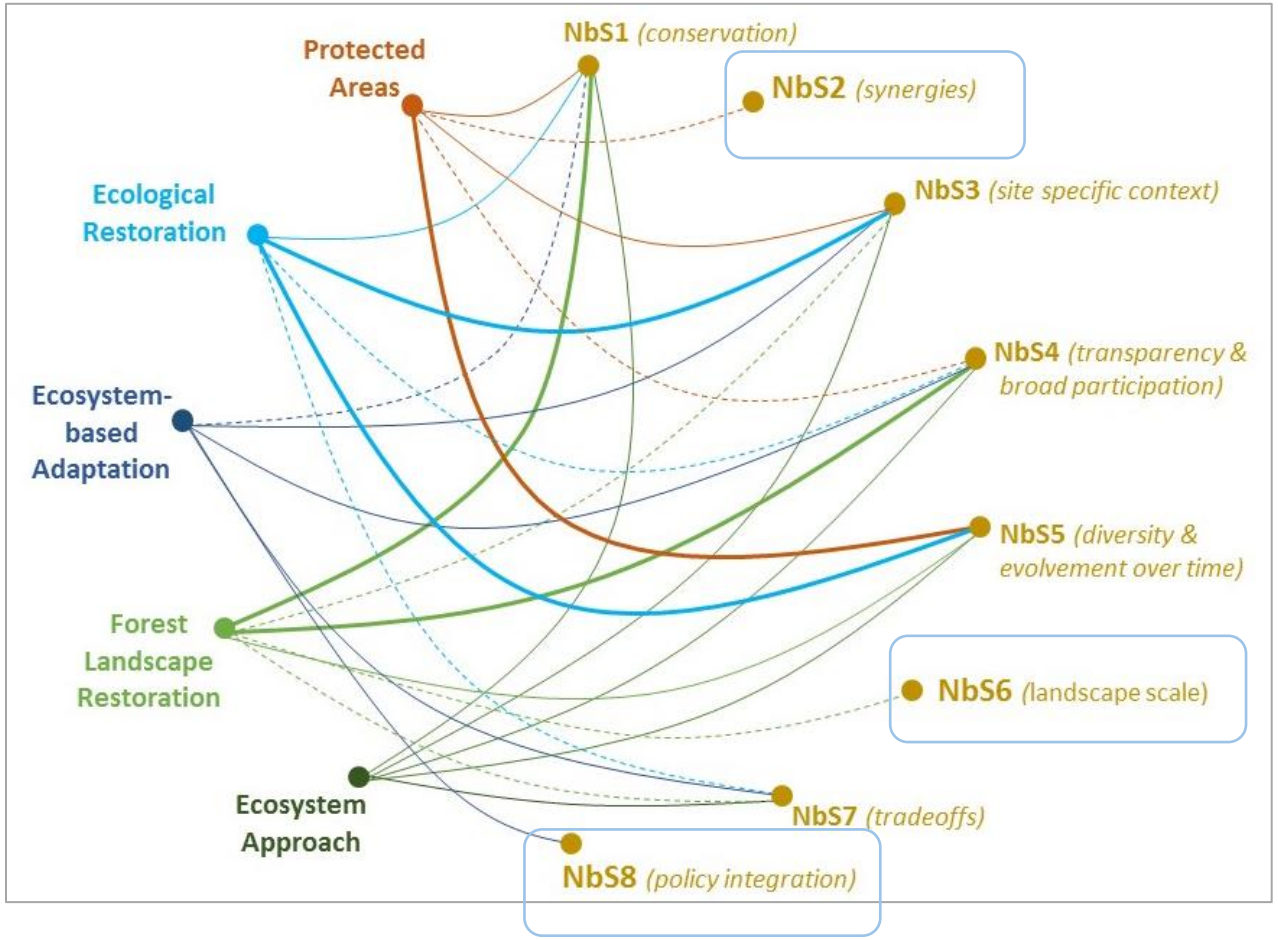
ABSTRACT

Despite substantial increases in the scope and magnitude of biodiversity conservation and ecological restoration, there remains ongoing degradation of natural resources that adversely affects both biodiversity and human well-



Links between NbS principles and principles in 5 frameworks

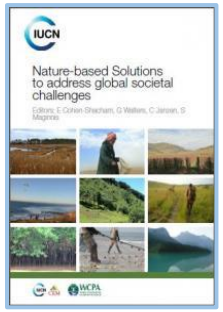


Specific terms **missing** / n**ot sufficiently emphasized** in the NbS principles:

- Adaptive management & governance
- Effectiveness
- Uncertainty
- Multi-stakeholder participation
- Temporal scale & Long-term stability

Cohen-Shacham et al., 2019

From NbS definitional framework to operational framework



IUCN WCC Resolution 6.069

Definition of Nature-based Solutions
Nature-based solutions 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.

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

Global Standard for NbS

1. Societal challenges
2. Design at scale
3. Biodiversity net-gain
4. Economic feasibility
5. Inclusive governance
6. Balance trade-offs
7. Adaptive management
8. Mainstreaming & Sustainability

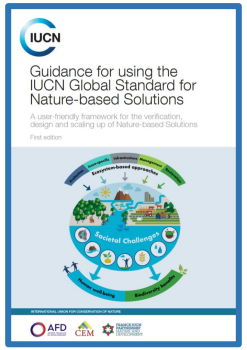


Figure: IUCN, 2020

NbS Global Standard - Use and target audience

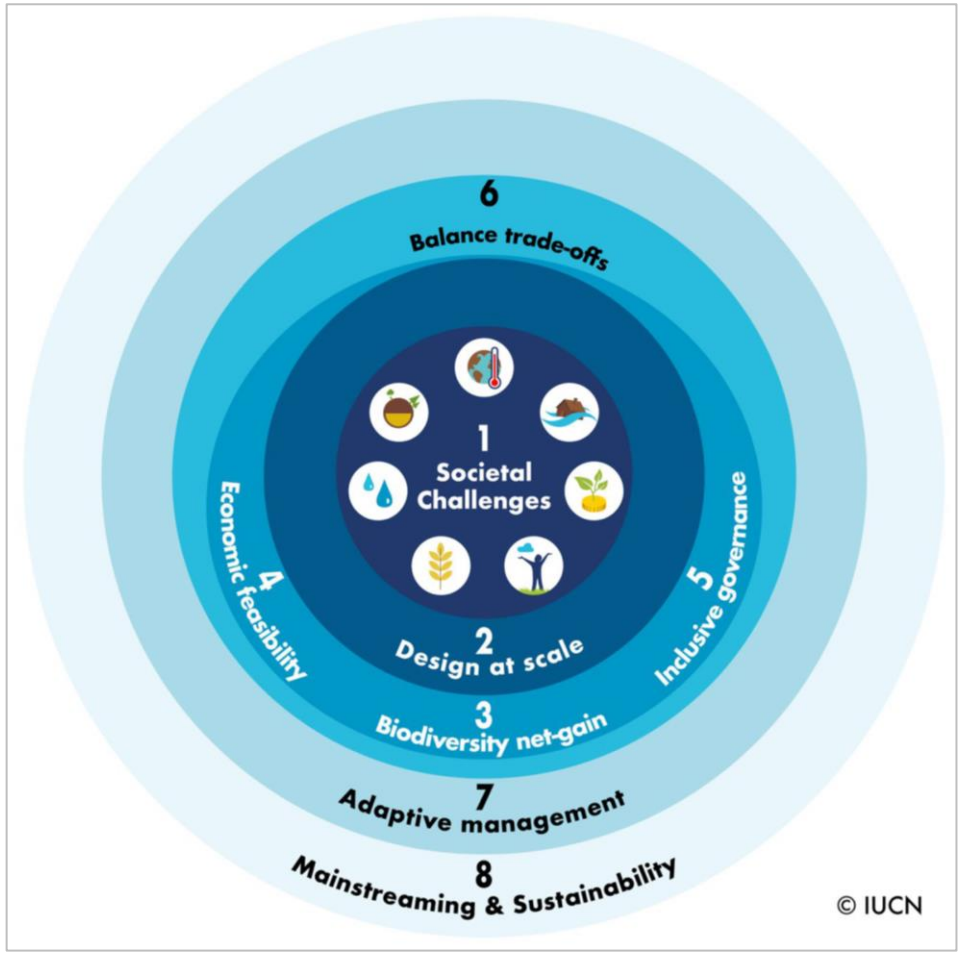
Purpose: Set a common basis of understanding for NbS and provide a robust framework, to **design, implement, assess, adapt and improve NbS.**

→ **Contribute to transformational change**

→ **Support NbS-related policy**

Audience: project managers, landscape planners, development practitioners, conservationists, policy makers, finance sector representatives (donors and investors), governments and planners.

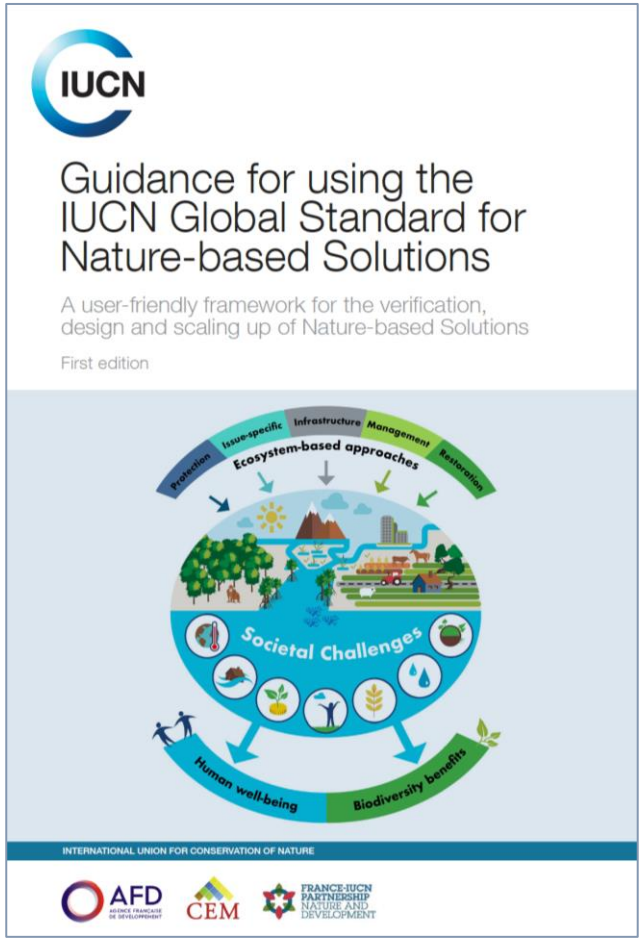
8 Criteria, 28 Indicators



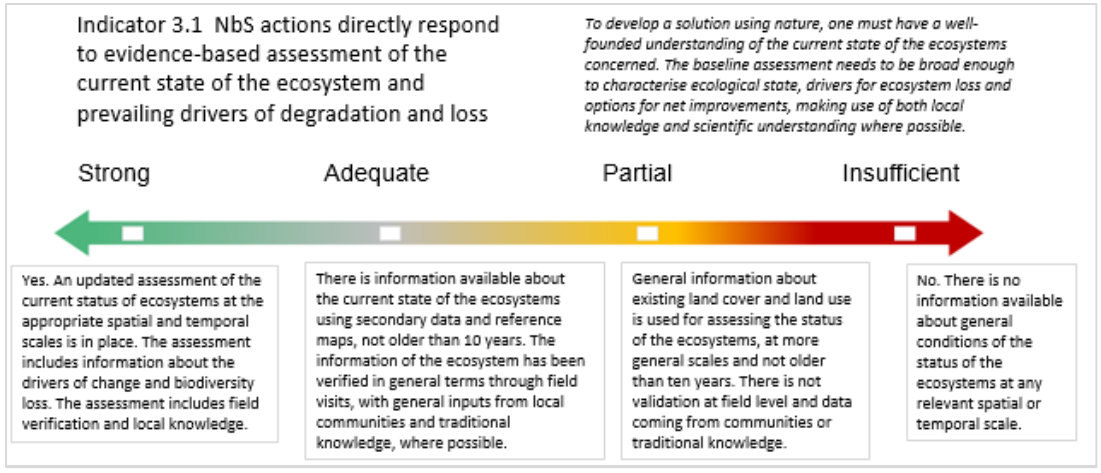
Global Standard for NbS – Available products

Part I:
NbS Standard

Part II:
Guidance



Part III:
Self-Assessment



Criterion 1: NbS effectively address societal challenges

- C-1.1 The most pressing societal challenge(s) for rights-holders and beneficiaries are prioritised
- C-1.2 The societal challenge(s) addressed are clearly understood and documented
- C-1.3 Human well-being outcomes arising from the NbS are identified, benchmarked and periodically assessed

Criterion 2: Design of NbS is informed by scale

- 2.1 The design of the NbS recognises and responds to interactions between the economy, society and ecosystems
- 2.2 The design of the NbS is integrated with other complementary interventions and seeks synergies across sectors
- 2.3 The design of the NbS incorporates risk identification and risk management beyond the intervention site

Criterion 3: NbS result in a net gain to biodiversity and ecosystem integrity.

- C-3.1 The NbS actions directly respond to evidence-based assessment of the current state of the ecosystem and prevailing drivers of degradation and loss
- C-3.2 Clear and measurable biodiversity conservation outcomes are identified, benchmarked and periodically assessed
- C-3.3 Monitoring includes periodic assessments of unintended adverse consequences on nature arising from the NbS
- C-3.4 Opportunities to enhance ecosystem integrity and connectivity are identified and incorporated into the NbS strategy

Criterion 4: NbS are economically viable

- C-4.1 The **direct and indirect benefits and costs associated with the NbS**, who pays and who benefits, are **identified and documented**
- C-4.2 A cost-effectiveness study is provided to support the choice of NbS including the likely impact of any relevant regulations and subsidies
- C-4.3 **The effectiveness of an NbS design is justified** against available alternative solutions, taking into **account any associated externalities**
- C-4.4 **NbS design considers a portfolio of resourcing options** such as market-based, public sector, voluntary commitments and actions to support regulatory compliance

Criterion 5: NbS are based on inclusive, transparent and empowering governance processes

- C-5.1 A **defined** and fully agreed upon **feedback** and **grievance resolution mechanism** available to all stakeholders before an NbS intervention is initiated
- C-5.2 Participation is based on **mutual respect and equality**, regardless of gender, age or social status, and upholds **the right of Indigenous Peoples** to Free Prior and Informed Consent
- C-5.3 **Stakeholders** who are directly and indirectly affected by the NbS have **been identified and involved in all processes** of the NbS Intervention
- C-5.4 **Decision-making processes** document and respond to the **rights and interests of all participating and affected stakeholders**
- C-5.5 Where the scale of the NbS extends beyond jurisdictional boundaries, **mechanisms are established to enable joint decision making of the stakeholders** in the affected jurisdictions

Criterion 6: NbS equitably balance trade-offs between achievement of their primary goal(s) and the continued provision of multiple benefits

- C-1.1 The **potential costs and benefits** of associated trade-offs of the NbS intervention are **explicitly acknowledged and inform safeguards** and any appropriate corrective actions
- C-1.2 **The rights, usage of and access to land and resources**, along with the responsibilities of different stakeholders, are **acknowledged and respected**
- C-1.3 The established safeguards are periodically reviewed to ensure that mutually-agreed trade-off limits are respected and do not destabilise the entire NbS

In other words, assessing and managing trade-offs around both social and ecological outcomes are crucial to planning NbS interventions

Criterion 7: NbS are managed adaptively, based on evidence

C-7.1 A NbS **strategy is established and used** as a basis for regular monitoring and evaluation of the intervention

C-7.2 A **monitoring and evaluation** plan is developed and implemented throughout the intervention lifecycle

C-7.3 A framework for **iterative learning that enables adaptive management** is applied throughout the intervention lifecycle

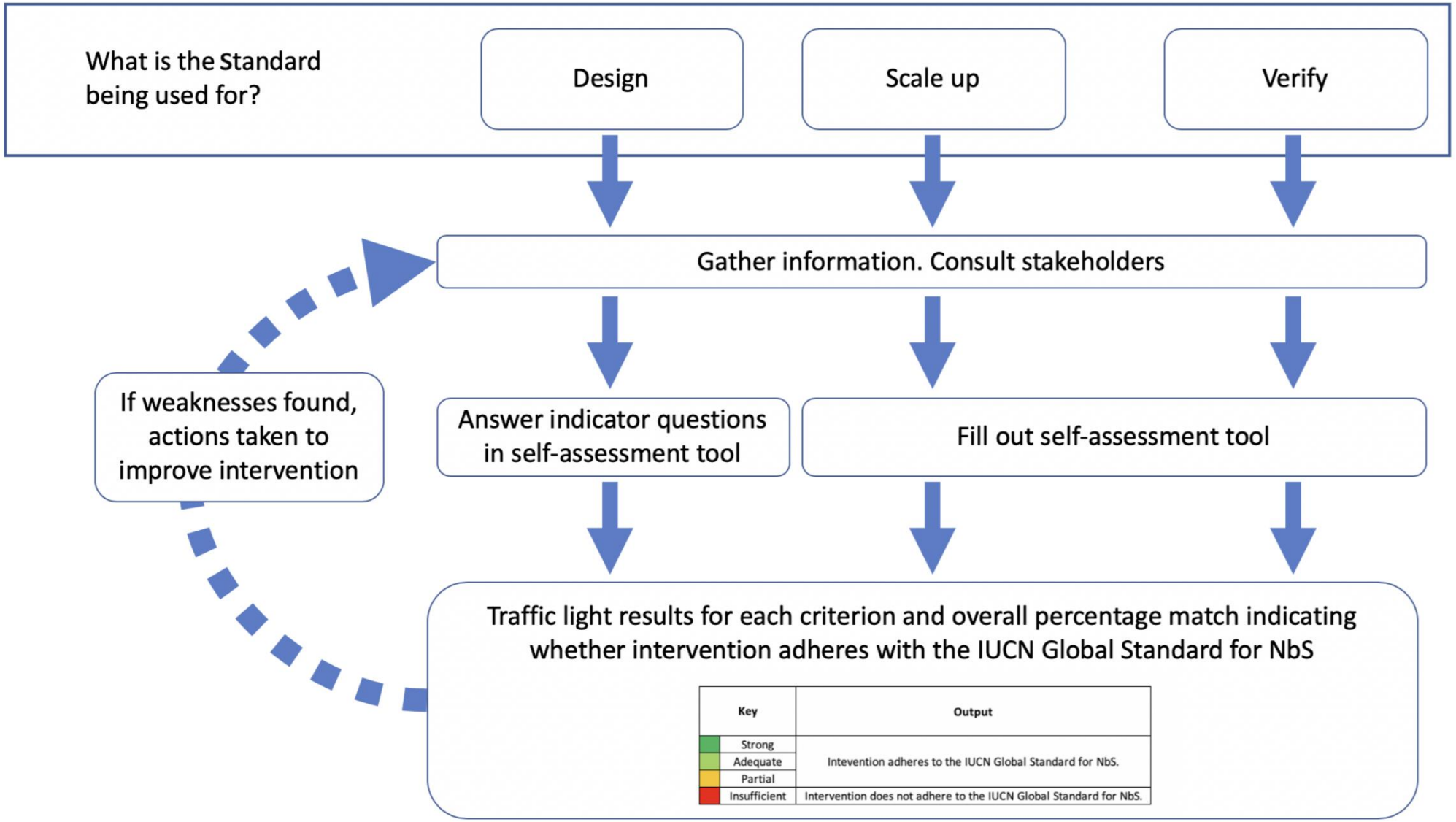
Criterion 8: NbS are sustainable and mainstreamed within an appropriate jurisdictional context

C-8.1 NbS design, implementation and lessons learnt are shared for triggering **transformative change**

C-8.2 NbS inform and enhance **facilitating policy and regulation frameworks** to support its uptake and mainstreaming

C-8.3 Where relevant, NbS contribute to **national and global targets** for **human wellbeing, climate change, biodiversity and human rights**, including the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)

How to use the Standard and how it is linked to the self-assessment?



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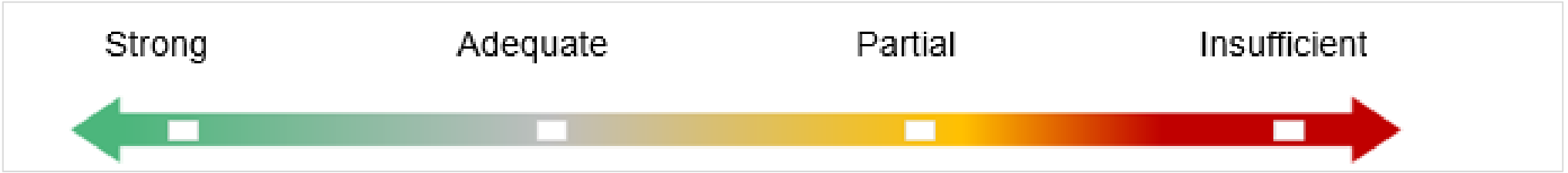


Indicator 3.1 NbS actions directly respond to evidence-based assessment of the current state of the ecosystem and prevailing drivers of degradation and loss

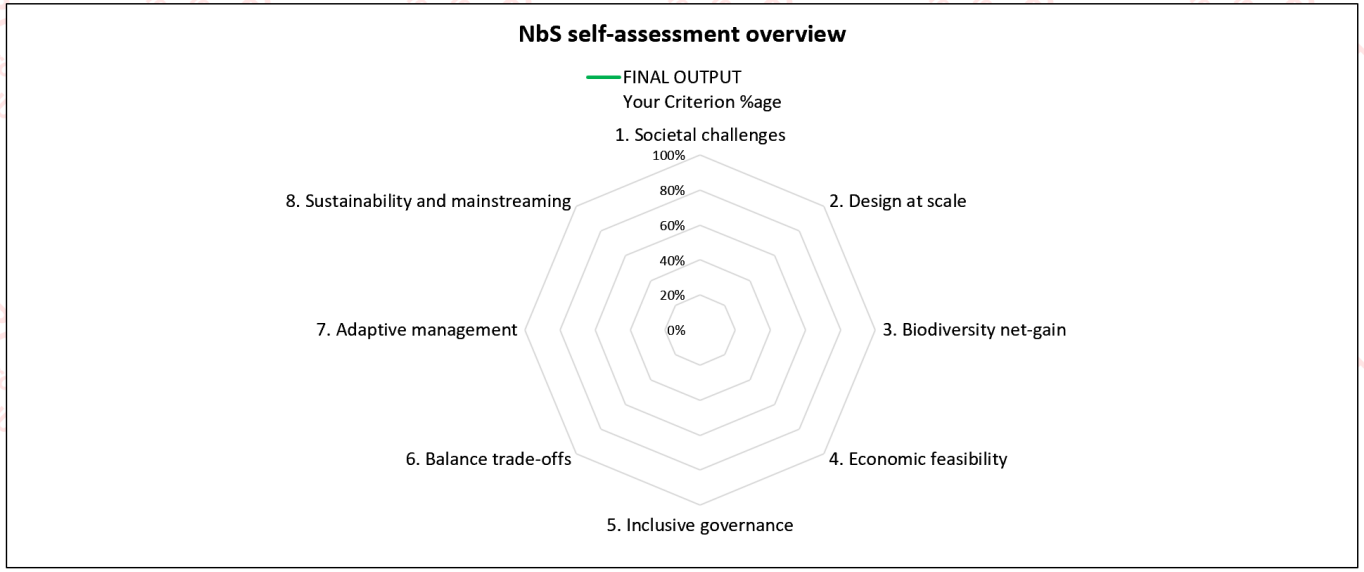
To develop a solution using nature, one must have a well-founded understanding of the current state of the ecosystems concerned. The baseline assessment needs to be broad enough to characterise ecological state, drivers for ecosystem loss and options for net improvements, making use of both local knowledge and scientific understanding where possible.

Strong	Adequate	Partial	Insufficient
Yes. An updated assessment of the current status of ecosystems at the appropriate spatial and temporal scales is in place. The assessment includes information about the drivers of change and biodiversity loss. The assessment includes field verification and local knowledge.	There is information available about the current state of the ecosystems using secondary data and reference maps, not older than 10 years. The information of the ecosystem has been verified in general terms through field visits, with general inputs from local communities and traditional knowledge, where possible.	General information about existing land cover and land use is used for assessing the status of the ecosystems, at more general scales and not older than ten years. There is not validation at field level and data coming from communities or traditional knowledge.	No. There is no information available about general conditions of the status of the ecosystems at any relevant spatial or temporal scale.

Output of the self-assessment

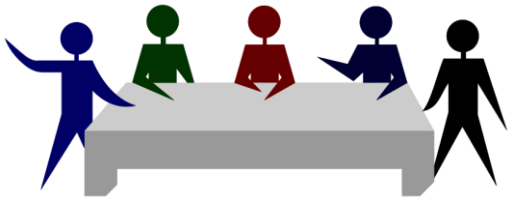
Criterion	Your Criterion Score	Maximum Criterion Score	Normalised criterion	FINAL OUTPUT Your Criterion %age
1. Societal challenges	0	9	0.00	0.0
2. Design at scale	0	9	0.00	0.0
3. Biodiversity net-gain	0	12	0.00	0.0
4. Economic feasibility	0	12	0.00	0.0
5. Inclusive governance	0	15	0.00	0.0
6. Balance trade-offs	0	9	0.00	0.0
7. Adaptive management	0	9	0.00	0.0
8. Sustainability and mainstreaming	0	9	0.00	0.0
Total			0.00	0.0

Key	Output
Strong	Intevention adheres to the IUCN Global Standard for NbS.
Adequate	
Partial	
Insufficient	Intervention does not adhere to the IUCN Global Standard for NbS.



Join the User Group for the IUCN Global Standard:
https://www.surveygizmo.com/s3/5741878/IUCN-Global-Standard-for-NbS-User-Group

Global Standard for NbS – Governance Structure



International Standard Committee

Oversight and safeguarding

Revision of standard

Science and Knowledge Committee

Scientific oversight of Standard

Research Priorities

Evidence base for standard revisions

National/Regional Hubs

Technical expertise

Capacity building

Standard adaptation and assurance

User & learning community

User Group

Feedback loop

Community of practice

Useful references and resources

NbS webpage on IUCN CEM website https://www.iucn.org/commissions/commission-ecosystem-management/our-work/nature-based-solutions

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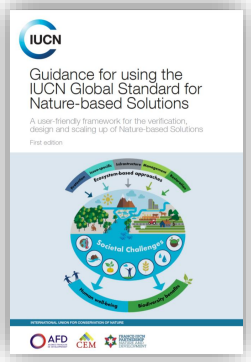

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