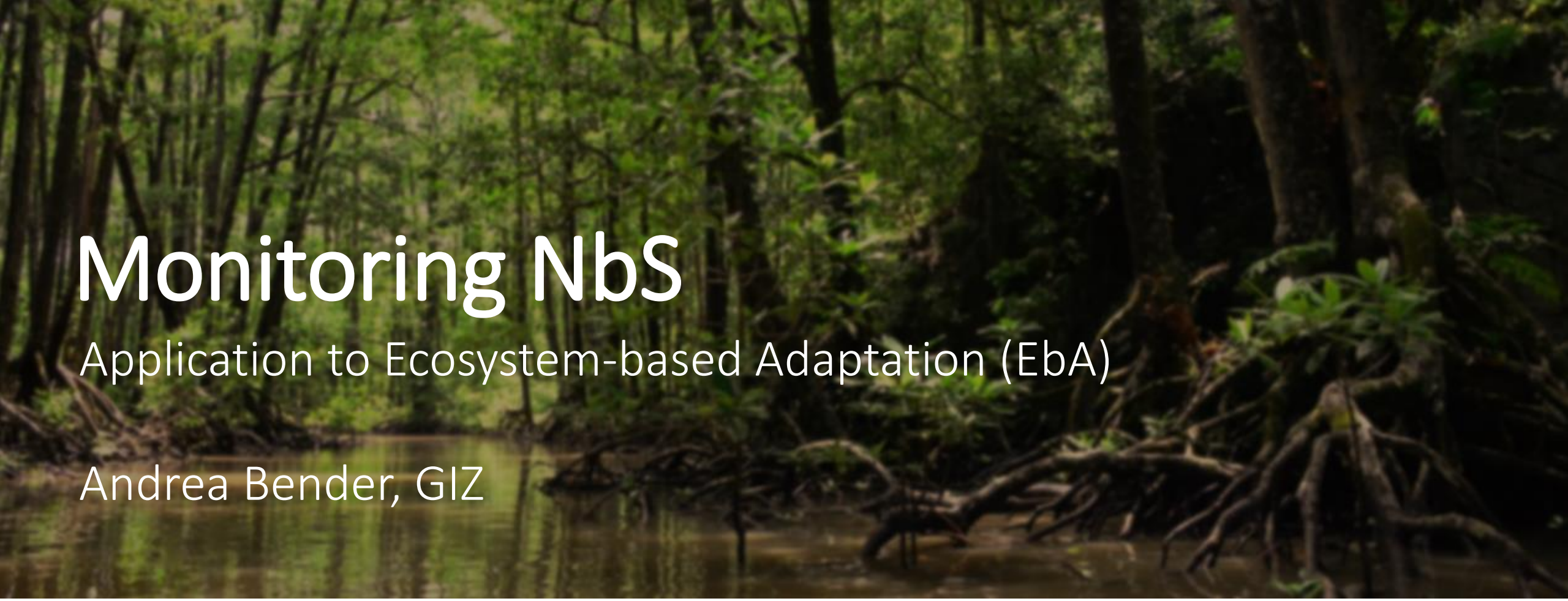


Monitoring NbS

Application to Ecosystem-based Adaptation (EbA)

Andrea Bender, GIZ

Nature-Based Solutions

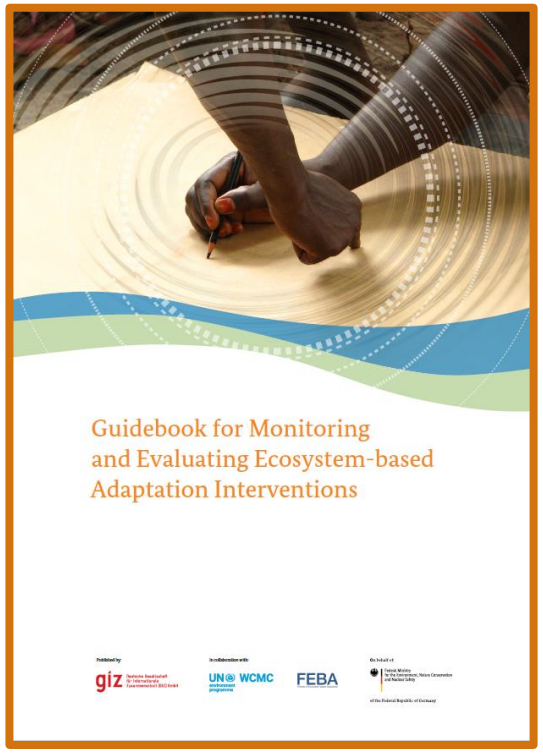
From planning to successful governance and implementation

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Content

1. Brief overview about some challenges of monitoring Nature-based Solutions
2. Methodology of using a Theory of Change (ToC)
3. Indicator development
4. How is monitoring included within the NbS standard?
5. Q&A

Download a copy of the Guidebook (ENG or ESP) and explore its content!



adaptation community.net

Guidebook ENG: https://www.adaptationcommunity.net/publications/guidebook-for-monitoring-and-evaluating-eba/

Guidebook ESP: https://www.adaptationcommunity.net/publications/guia-para-monitoreo-y-evaluacion-de-intervenciones-de-adaptacion-basada-en-ecosistemas/

Resources

Recommended methodology of the Guidebook

Step 1: **Developing a results framework**

Step 2: **Defining indicators & setting a baseline**

Step 3: **Operationalizing the M&E system**

Step 4: **Using and communicating the results**

Overview of challenges when monitoring NbS

- Changes in ecosystems are inherently complex, long-term and influenced by multiple drivers
- Long time horizons required to observe social and environmental adaptation benefits
- Tracking multiple objectives and co-benefits

Theory of Change (ToC) I

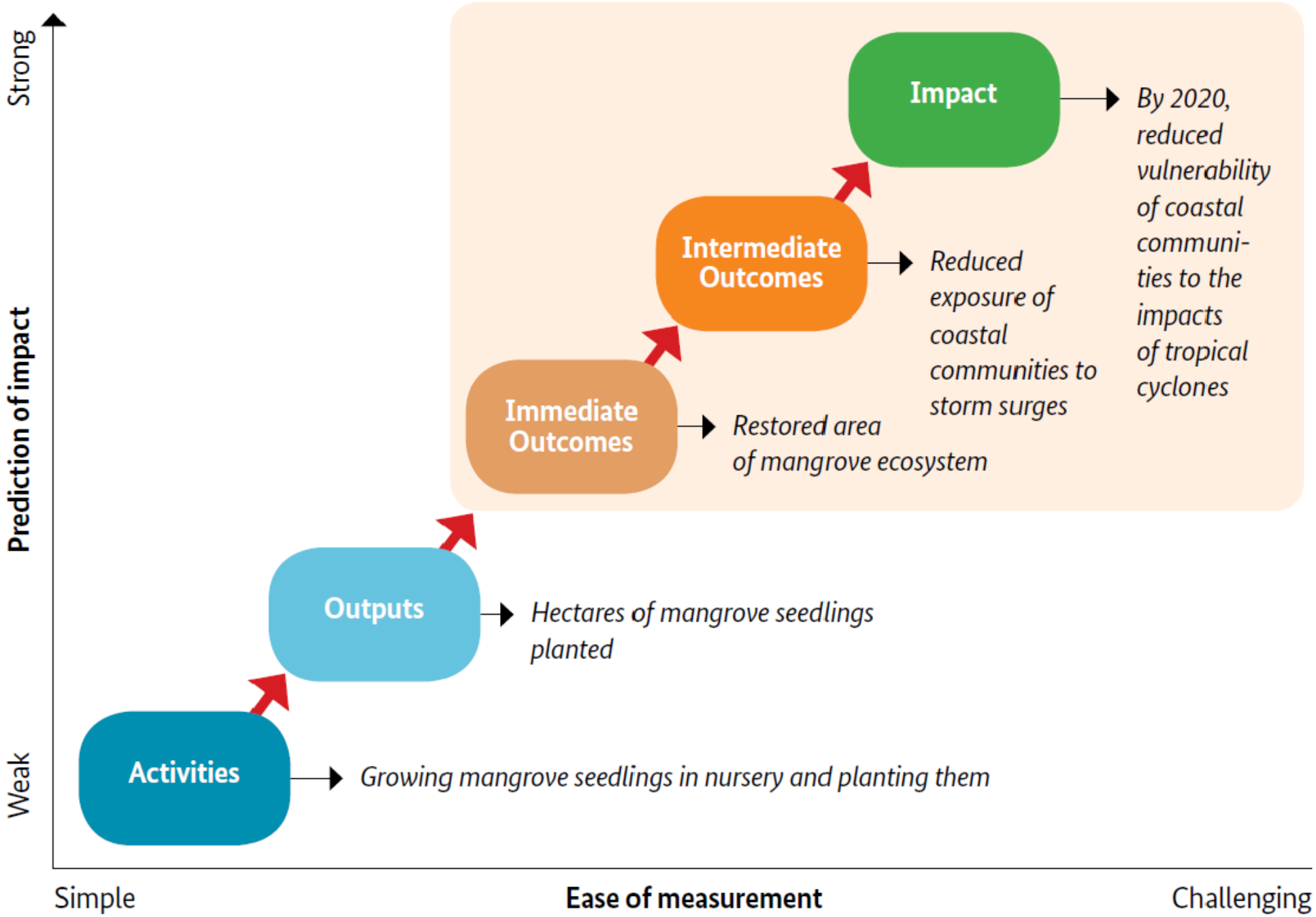
- Recommended approach for planning and monitoring EbA interventions
- Helps define the purpose of an intervention
- Systematic approach to defining **how and why change will happen**
- Results framework used to map out the causal pathway of change towards long term objectives
- The impact pathway (including risks & assumptions) can be used as a basis for identifying suitable indicators

ToC II

- Help you illustrate the relationship between different intermediate goals of your intervention and the overall project success

- Guide your project team, ideally in partnership with relevant local stakeholders, in mapping out and discussing the mechanisms that underpin each step in the causal pathway

- Enable you to identify both short term indicators (focused on key outputs or immediate outcomes) for reporting on progress during the project's lifespan, and longer term indicators


Strong
Prediction of impact
Weak
Activities
Growing mangrove seedlings in nursery and planting them
Outputs
Hectares of mangrove seedlings planted
Immediate Outcomes
Restored area of mangrove ecosystem
Intermediate Outcomes
Reduced exposure of coastal communities to storm surges
Impact
By 2020, reduced vulnerability of coastal communi-ties to the impacts of tropical cyclones
Simple
Ease of measurement
Challenging

Indicator development

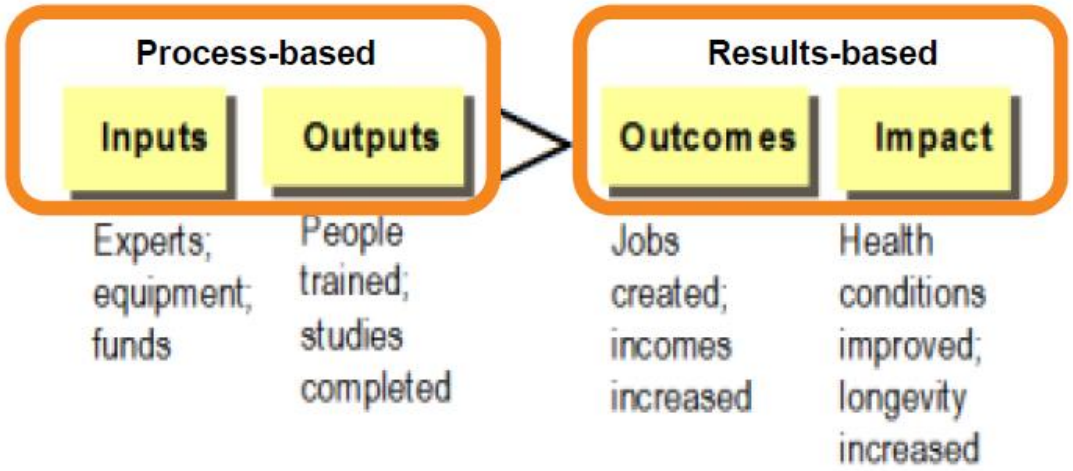
What are indicators?

*"Indicators are **units of information** (about particular objects, conditions, characteristics or behaviour) that can **represent**(or act as markers for) the **broader** environmental, socio-economic or climatic **situation**.*
They can be quantitative or qualitative."

Types of indicators

Process-based :

- Used to analyse the design of an intervention
- Measure **inputs and outputs**
- Can inform adaptive management
- Can be measured in early stages
- *I.e. are we on the right track?*



Results-based :

- Used to assess the effectiveness of an intervention
- Measure **outcomes and impacts**
- Provide information for evaluating the progress towards medium-and long-term objectives
- Usually take longer to become evident
- *I.e. did we achieve what we wanted to achieve?*

Factors to consider when desiging indicators

- There is **no single set of universal or standard adaptation indicators**
- The wide range of possible EbA measures in various ecosystems requires the identification of indicators on a **case by case basis**
- Indicators need to cover the key **ecological and socio-economic aspects** of adaptation to climate change in the context of the EbA measure
- Indicators should **be linked to the ToC** for the EbA measure: to its expected ecological and socio-economic outcomes and impact, i.e. how do people benefit from the changes that occur in the ecosystem?

What makes a good indicator?

- **Specific and well defined**: everybody has the same understanding of what should be measured
- **Valid**: there is a proven link between the indicator and the topic to be assessed
- **Measurable and realistic**: there is a method for collecting the information, and it is feasible/affordable to do it
- **Easy to interpret and explain:** for example, it should be clear whether an increase or decrease in the indicator value is good or bad

Process for developing indicators

- Different guidelines on how to develop and select indicators

Can be summarised in three main steps:

- Identifying topics/areas to be monitored
- Identifying potential indicators
- Refining indicators

Example: Hypothetical rangeland restoration as EbA intervention

EbA measures implemented:

- Soil erosion control measures
- Soil rehabilitation
- Sustainable farming practices (including clearing of invasive species; rotational grazing; non-lethal predator management practices)
- Capacity building programmes

Anticipated outcomes:

- Increased water availability, reduced erosion
- Increased income/job creation
- Reduced livestock mortality

Expected impact:

- Increased resilience of dryland communities to prolonged and frequent drought periods due to increasing temperatures and reduced rainfall

Example outcome indicators

Indicator topic	Indicator	Indicator type	EbA focal area
Soil quality and soil retention	Soil loss from watershed (m3/ha)	Outcome	Ecosystem service delivery
Vegetation cover and quality	Carbon stored by restored habitat (ton C/ha)	Outcome	Cost/Co-benefit
Water and food security	Percentage of people in drought-prone areas with reliable access to a safe water source	Outcome	Human-well-being
Employment and income opportunities	Change in percentage of income from sustainable vs. non-sustainable agricultural activities	Outcome	Adaptive capacity
Livestock mortality associated with high temperatures	Percentage of total livestock killed by drought in relation to duration and intensity of dry period (per million)	Outcome	Disaster risk reduction

Choosing appropiate indicators

- Large numbers of example indicators available from the literature (e.g. World Bank, IUCN, Conservation International, GIZ/UNEP-WCMC Guidebook, European Environment Agency (EEA)…)

- The key thing is to identify the most relevant ones **and** adjust them to your context, taking into account:
  - Purpose and audience of M&E
  - Intervention logic
  - Environmental and socio-economic context

How is monitoring included within the NbS standard?

- Monitoring is explicitly mentioned within IUCN‘s global standard for NbS (except for criterion 2), e.g. “periodically assessed” etc.
- M&E is a special focus in criterion 7
- Self-assessment tool available as well

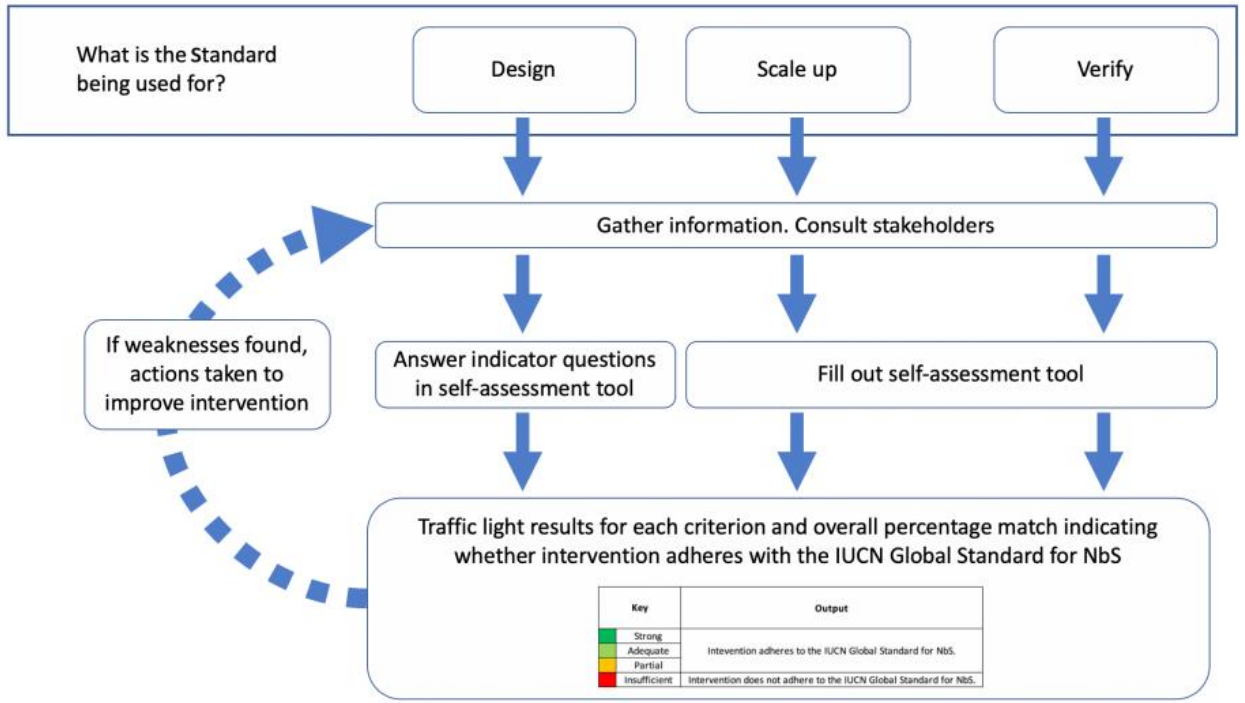


Figure 7: How to use the Standard and how it is linked to the self-assessment. (© IUCN)

7. NbS are managed adaptively, based on evidence

- A **NbS strategy** is established and used as a **basis for regular monitoring and evaluation** of the intervention
- A **monitoring and evaluation plan** is developed and implemented throughout the intervention lifecycle
- A framework for **iterative learning** that enables adaptive management is applied throughout the intervention lifecycle

Thank you for your attention

I look forward to your questions and comments

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On behalf of:

Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

of the Federal Republic of Germany