

## 7. Institutions and Organisations Promoting NbS

Exploring the landscape of organisations dedicated to advancing NbS, especially for coastal adaptation involves understanding various stakeholders, ranging from international bodies and NGOs to research institutions and local community groups. These organisations collaborate across various levels, from local to global, to share knowledge, mobilise resources, and implement projects that demonstrate the effectiveness of NbS in enhancing coastal resilience. The landscape is dynamic, with increasing recognition of the importance of integrating ecological and social systems into climate adaptation strategies.

The following sections provide an overview of the key types of organisations involved in this field:

### 7.1. International and multilateral organisations

#### **United Nations Environment Programme (UNEP)**

UNEP puts ecosystem restoration and sustainable management practices at the forefront of their work to protect communities from climate impacts. Its initiatives in the coastal context often focus on mangrove restoration and coral reef protection to enhance biodiversity and natural barriers against sea-level rise and storms.

#### **Intergovernmental Panel on Climate Change (IPCC)**

The IPCC provides scientific assessments on climate change, including the effectiveness of NbS in coastal adaptation. It underscores the role of coastal ecosystems in carbon sequestration and their importance in protecting shorelines from erosion and extreme weather events.

#### **United Nations Office for Disaster Risk Reduction (UNDRR)**

UNDRR advocates for integrating NbS into DRR strategies, recognising their potential to reduce vulnerability and enhance resilience of coastal areas against tsunamis, storm surges, and coastal erosion.

#### **World Bank**

The World Bank invests in NbS for coastal adaptation, offering financial and technical support for projects such as wetland restoration and sustainable fisheries. These projects aim to reduce the risk of flooding and improve livelihoods, contributing to economic and environmental sustainability.

#### **International Finance Corporation (IFC)**

As the World Bank's investment arm, IFC supports sustainable development in emerging markets. A key policy of the IFC emphasises biodiversity conservation and sustainable resource management, aiming to protect ecosystems, support livelihoods, and enhance economic prosperity (International Finance Corporation, 2012).

#### **USAID**

USAID incorporates NbS into its development programmes to improve coastal resilience by supporting mangrove reforestation and sustainable land management for ensuring the well-being of dependent communities.

### **World Economic Forum**

The World Economic Forum highlights the economic benefits of NbS in coastal adaptation, encouraging public–private partnerships to invest in green infrastructure. This includes funding innovative approaches such as living shorelines, which combine natural habitat restoration with traditional coastal protection methods.

### **United Nations Development Programme (UNDP)**

UNDP, as part of the United Nations' global development network, advocates for change and connecting countries to share knowledge, experience, and resources to help people build a better life. It supports global development projects, including NbS for coastal adaptation, promoting sustainable practices to improve resilience against environmental challenges.

### **United Nations High Commissioner for Refugees (UNHCR)**

Also known as the United Nations Refugee Agency, UNHCR is dedicated to saving lives; protecting rights; and building a better future for refugees, forcibly displaced communities, and stateless people. It also focusses on the integration of NbS in refugee settlements to enhance climate resilience and environmental sustainability amongst other vulnerable areas.

### **Asian Development Bank (ADB)**

ADB is a regional development bank established to facilitate economic development and cooperation among countries in Asia and the Pacific region. It finances projects across the region, including those that incorporate NbS for coastal protection and sustainable development, aiming to mitigate climate change impacts.

### **Cities Development Initiative for Asia (CDIA)**

CDIA is a project preparation facility that provides assistance to Asian cities to bridge the gap between their development plans and the implementation of infrastructure investments, with an emphasis on incorporating NbS for urban and coastal resilience against climate change.

### **Red Cross**

The Red Cross, part of the International Red Cross and Red Crescent Movement, is a humanitarian organisation that provides emergency assistance, disaster relief, and education in various countries. It also engages in mobilising communities for climate adaptation projects, including NbS, to improve disaster preparedness.

### **Global Environment Facility (GEF)**

GEF is a financial mechanism that provides funding to developing countries for projects that benefit the global environment and promote sustainable livelihoods in local communities. It addresses six focal areas, namely biodiversity, climate change, chemicals, international waters, land degradation, and the ozone layer, by supporting projects that mitigate environmental risks and promote sustainable development.

## **7.2. NGOs and environmental groups**

### **World Resources Institute India (WRI India)**

WRI India works on enhancing coastal resilience through NbS by advocating for the restoration of mangroves, wetlands, and other coastal ecosystems. Its initiatives focus

on policy development, stakeholder engagement, and research for effective integration of NbS into urban and rural coastal planning.

### **Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) India**

GIZ India supports projects that incorporate NbS for coastal adaptation, emphasising sustainable management of natural resources to protect coastlines from erosion and sea-level rise. It collaborates with local communities and governments to implement projects that blend traditional knowledge with modern conservation techniques.

### **India Climate Collaborative**

The India Climate Collaborative brings together businesses, NGOs, and government entities to fund and implement climate solutions, including NbS for coastal adaptation. Their work often focusses on building resilience in vulnerable coastal communities through ecosystem restoration and sustainable practices.

### **The Nature Conservancy**

The Nature Conservancy implements NbS projects worldwide, including India, with a focus on restoring coral reefs and mangrove forests to reduce the impacts of coastal erosion and storms. Its efforts aim to protect biodiversity while enhancing the natural defence mechanisms of coastlines.

### **World Wildlife Fund (WWF) India**

WWF India is involved in several NbS initiatives aimed at conserving coastal and marine ecosystems. By promoting the protection and restoration of habitats such as mangroves and coral reefs, it contributes to building natural resilience against climate change-induced challenges.

### **Wetlands International**

Wetlands International focusses on the conservation and restoration of wetlands as critical NbS for coastal protection. Its projects in India aim to maintain the functions of these vital ecosystems, including buffering storm surges and providing habitats for biodiversity.

### **Wildlife Institute of India**

The Wildlife Institute of India emphasises the conservation and management of wildlife, offering capacity building and educational training for wildlife research and management. Its initiatives across India focus on preserving natural habitats, which play a crucial role in regulating climate, supporting biodiversity, and providing sustainable resources.

### **Conservation International**

Conservation International operates worldwide, with a strong focus on supporting projects in the Global South. These initiatives prioritise NbS aimed at enhancing coastal resilience, protecting watersheds, and fostering community-based initiatives.

### **Caterpillar Foundation**

The Caterpillar Foundation supports projects that integrate NbS into coastal adaptation strategies, recognising the role of healthy ecosystems in sustaining livelihoods and protecting against climate impacts. Its funding helps scale up successful NbS interventions in vulnerable coastal regions.

### **Department of Environment, Food and Rural Affairs (DEFRA), Government of the United Kingdom**

DEFRA actively supports international initiatives that apply NbS for coastal and marine conservation. Its programmes often fund research and implementation projects that aim to enhance coastal resilience through ecosystem-based approaches.

### **Norway's International Climate and Forest Initiative (NICFI)**

NICFI invests in projects that protect and restore forests as part of broader NbS strategies, including coastal plantations and mangroves. Its support for these ecosystems contributes to global efforts to mitigate climate change and protect vulnerable coastlines.

### **International Council for Local Environmental Initiatives (ICLEI)**

ICLEI focusses on urban sustainable development through NbS, low-carbon solutions, and smart urban infrastructure projects. It facilitates the participation of South Asian local governments in United Nations' conferences and other global forums, strengthening international policies to support local initiatives for the global sustainability agenda.

## **7.3. Research institutions and academic networks**

### **Stockholm Environment Institute (SEI)**

SEI engages in cutting-edge research and policy development to advance NbS for coastal adaptation, focussing on sustainable management of ecosystems such as mangroves and wetlands to protect coastlines from erosion and sea-level rise. Its work emphasises the integration of scientific knowledge with local community practices to enhance the resilience of coastal areas against climate change impacts.

### **National Institute of Urban Affairs' Climate Centre for Cities (NIUA C-Cube)**

NIUA C-Cube plays a pivotal role in promoting NbS in Indian urban coastal cities by advocating for the integration of green infrastructure, such as urban wetlands and mangrove parks, into city planning and development strategies. It focusses on capacity building, policy advocacy, and facilitating partnerships among government bodies, local communities, and private sector stakeholders to implement NbS that enhance urban resilience to climate change.

## **7.4. Governmental and policy-making bodies**

### **MoEFCC**

This ministry is the principal governmental agency responsible for crafting and executing policies and programmes concerning environmental conservation, biodiversity, forest management, and climate change. It oversees various subordinate bodies tasked with specific environmental functions.

### **Central Empowered Committee (CEC)**

The CEC was made a permanent statutory body by the MoEFCC to monitor the implementation of the Supreme Court's orders on environmental issues across India.

### **Central Ground Water Authority (CGWA)**

Falling under the Ministry of Jal Shakti, the CGWA manages and regulates the country's groundwater resources. It establishes guidelines for sustainable groundwater use and issues necessary clearances for groundwater extraction.

### **Central Pollution Control Board (CPCB)**

A statutory body under the MoEFCC, the CPCB serves as the apex authority for pollution control in India. It sets pollution control standards, conducts environmental research, and coordinates National Environmental Monitoring Programmes.

### **Forest Survey of India (FSI)**

As a part of the MoEFCC, the FSI conducts comprehensive surveys and assessments of forest resources in India, monitoring changes in forest cover and contributing to biodiversity conservation.

### **Indian Council of Forestry Research and Education**

This council coordinates forestry research and education in India, fostering sustainable forest management practices.

### **National Centre for Sustainable Coastal Management (NCSCM)**

NCSCM is an Indian government initiative dedicated to the sustainable development of coastal regions. It focusses on implementing NbS such as mangrove restoration to enhance coastal resilience against erosion and storms, ensuring biodiversity conservation and supporting local livelihoods.

### **National Biodiversity Authority (NBA)**

Functioning under the MoEFCC, NBA is dedicated to the conservation of biological diversity, sustainable utilisation of its components, and equitable sharing of benefits derived from biological resources.







## 8. NbS Frameworks and Application

Recognising the need for a structured approach to harness the full potential of NbS, various frameworks and indicators have been developed by leading organisations and research bodies. These frameworks serve as comprehensive guides for evaluating, designing, and scaling up NbS projects, ensuring they meet the rigorous standards of effectiveness, efficiency, and adaptability. They facilitate the implementation of NbS and the development of conservation measures as well as support policy-making, catering to a diverse audience including governments, businesses, and non-profits. By providing structured methodologies, these tools aim to mainstream NbS as a viable solution for environmental management and sustainable urban planning. Here, we provide a summary of some of these frameworks and the application of certain frameworks in different geographical contexts or for addressing different problems.

### 8.1. IUCN global standard for NbS

This user-friendly framework developed by the IUCN establishes a standard for verifying, designing, and scaling-up NbS (Figure 7). It guides stakeholders in the on-ground implementation of NbS, expedites policy development, and advances conservation science. Catering to a broad audience including governments, businesses, donors, and non-profits, the standard is versatile and applicable in various settings and scales, from protected areas to urban contexts and for projects of different sizes. Developed based on the feedback from NbS practitioners, it adopts a facilitative approach, avoiding rigid norms to allow for flexibility in achieving outcomes. The standard is structured around 8 criteria and 28 indicators (IUCN, 2020b).

**Criterion 1:** Identifies societal challenges addressed by NbS, such as climate change adaptation, DRR, and food security

- Prioritise challenges through inclusive consultations
- Document challenges and outcomes for accountability
- Use Specific, Measurable, Achievable, Relevant, and Time-Bound (SMART) targets to assess human well-being impacts

**Criterion 2:** Guides solution design, considering the geographic, economic, ecological, and societal scales of the issue, and recognises that the target area is part of a larger system

- Design NbS considering economy, society, and ecosystems
- Integrate with other sectors for synergistic solutions
- Include risk management beyond the intervention site

**Criteria 3, 4, and 5:** Correspond to pillars of sustainable development, focussing on environmental sustainability, social equity, and economic viability

- Set and monitor clear biodiversity conservation targets
- Monitor for unintended impacts, ensuring ecological risk mitigation
- Enhance ecosystem integrity and connectivity
- Assess NbS benefits and costs, specifying impacts on stakeholders

- Conduct cost-effectiveness studies for economic sustainability
- Compare NbS effectiveness against alternatives
- Explore diverse funding options and establish feedback mechanisms
- Promote transparency, equity, and dialogue in grievance resolution
- Value equality in participation across all demographics and indigenous communities
- Perform thorough stakeholder mapping to safeguard interests and rights
- Document and publicise decision-making processes for accountability
- Form joint decision-making bodies for NbS affecting multiple areas

**Criterion 6:** Addresses the need to balance trade-offs and choices for short- and long-term gains

- Balance trade-offs with safeguards to protect vulnerable groups
- Uphold rights and access to resources for all stakeholders
- Review safeguards to ensure they remain effective and fair

**Criterion 7:** Highlights the importance of adaptive management for NbS, facilitating continuous learning and adjustment to systemic changes

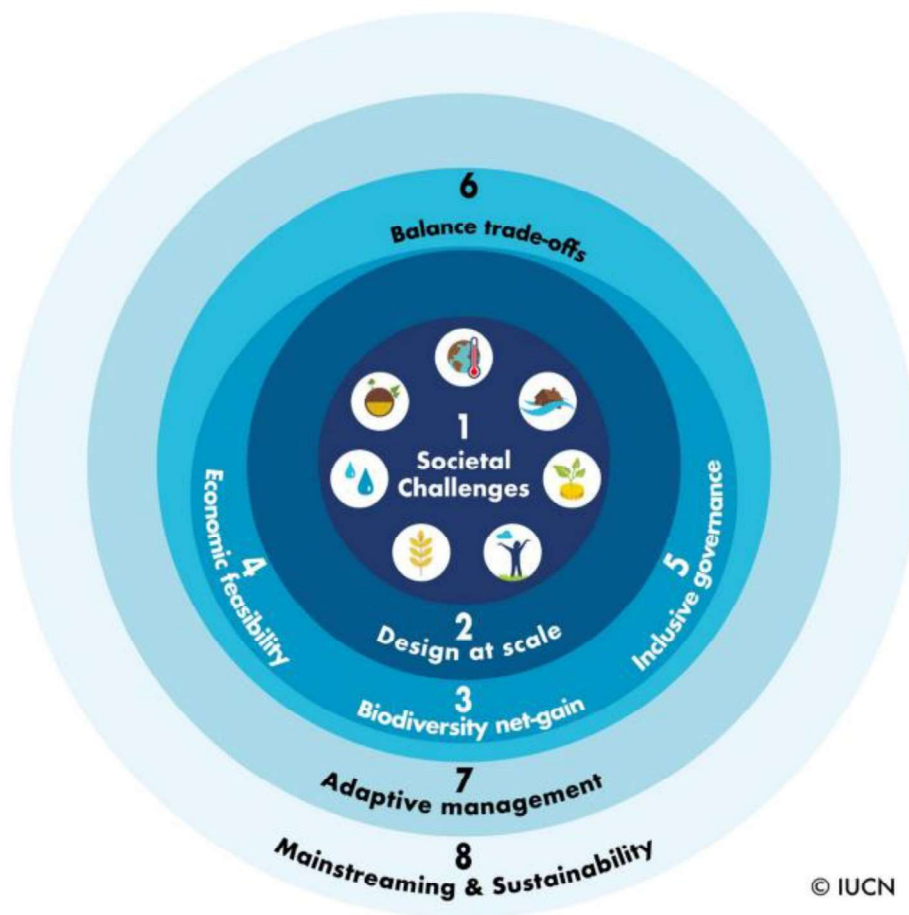
- Establish NbS strategy for ongoing monitoring and evaluation
- Implement a monitoring plan to adapt strategies based on feedback
- Use iterative learning for continuous improvement

**Criterion 8:** Stresses the significance of long-term, scaled implementation of NbS and advocates for embedding NbS concepts and actions into policy and regulatory frameworks, aligning with national targets and international commitments to maximise impact

- Embed NbS into policy for alignment with national and international goals
- Share NbS lessons to encourage replication and policy integration
- Align NbS with global targets to ensure sustainability and commitment



Figure 7: Criteria constituting the IUCN Global Standard for NbS



Source: International Union for Conservation of Nature (2020)

## 8.2. World Bank guideline for project developers

This guideline promotes the adoption of NbS for climate resilience by offering actionable valuation approaches for investments. It underlines that a good assessment values both the risk reduction and additional benefits of NbS, including biodiversity, climate regulation, and ecosystem services. It emphasises a multi-benefit, stakeholder-engaged approach. The guideline suggests engaging stakeholders to identify locally relevant benefits, addressing uncertainties in climate and socio-economic conditions, and integrating benefit and cost assessments into investment projects to ensure economic viability and community engagement. It proposes a tiered approach to research design based on the project phase, data availability, and resource constraints, aiming to select the best method while accommodating different priorities and providing detailed outputs as needed. This structured approach underscores the importance of comprehensively valuing and assessing NbS to support informed decision-making and investment in climate resilience (Figure 8).

**Upstream Phase:** Before project conception, national or regional economic assessments of NbS raise awareness and identify feasible solutions.

**Project Identification and Preparation:** NbS investment ideas undergo technical and economic evaluation, often involving biophysical models and economic analysis to attract sustainable financing.

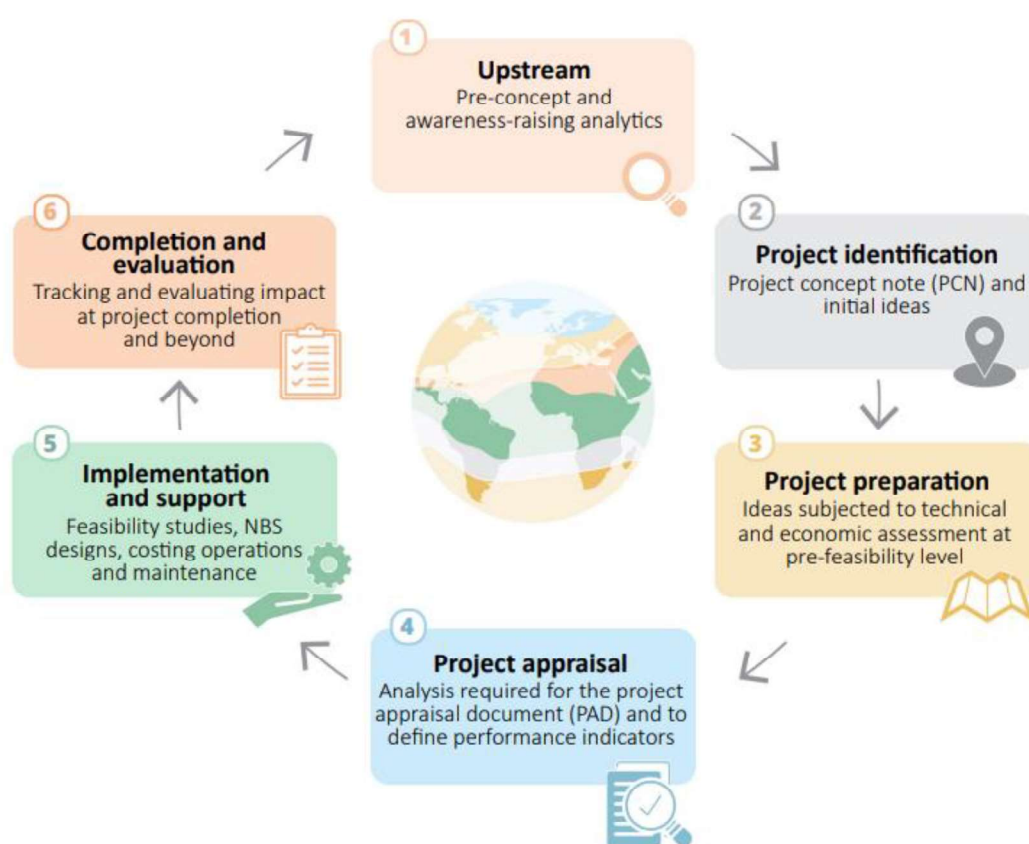
**Project Appraisal:** Economic and financial analysis (EFA) is conducted using various approaches such as cost-benefit analysis or multicriteria analysis, building on assessments from the identification phase.

**Implementation and Support:** During implementation, detailed feasibility studies are conducted, including NbS designs, costing, and engagement with local communities.

**Resilience Rating System:** Projects achieving resilience depend on the analytical approach used for EFA, with probabilistic assessments or robust decision-making yielding higher resilience ratings.

**Completion and Evaluation:** Well-defined project indicators are crucial for evaluating NbS impact and benefits beyond project completion. The Implementation Completion Report tracks project performance and progress on indicators.

Figure 8: Assessment of NbS benefits and costs at different project cycles



Source: World Bank (2022)

### 8.3. REGREEN framework

Developed for the European Commission, the document examines strategies aimed at reducing urban land consumption while integrating NbS into planning systems. It also offers guidelines for improved integration into the urban planning documents, for example:

**Environmental assessment and knowledge:** To address biodiversity and NbS challenges in regional planning, local councils can enhance their understanding through nature surveys and ecological assessments. These evaluations, conducted by ecologists or environmental groups, identify critical ecosystems and areas vulnerable to climate change effects such as urban heat islands and flood risks.

**Incorporating ecological corridors into planning documents:** In urban areas, green spaces such as parks and gardens act as biodiversity reservoirs and corridors. Planning ecological connectivity at the local level is important because global-scale documents may not suit urban contexts. Ecologists can identify target species to design functional ecological corridors that benefit biodiversity. This helps in land planning by (1) identifying vulnerable areas in ecological networks for conservation prioritisation, (2) locating suitable spots for actions including landscaping to improve connectivity, and (3) assessing the impact of land-cover changes on species.

**Improving NbS planning through ecosystem service modelling and mapping:** Mapping and modelling tools are essential for urban planners, offering precise land-use mapping and tracking changes over time to achieve objectives such as ecosystem restoration and NbS implementation. It is valuable for incorporating NbS into the planning process, including zoning systems for land protection and restoration, as well as guidelines for biodiverse design and management in planning schemes.

**Protecting and restoring ecosystems:** Improving the integration of NbS into planning documents involves safeguarding existing ecosystems, which already serve as NbS for conserving biodiversity and adapting to climate change. Urban planning documents can effectively facilitate the widespread implementation of NbS through governmental zoning, private easements, and restrictive covenants.

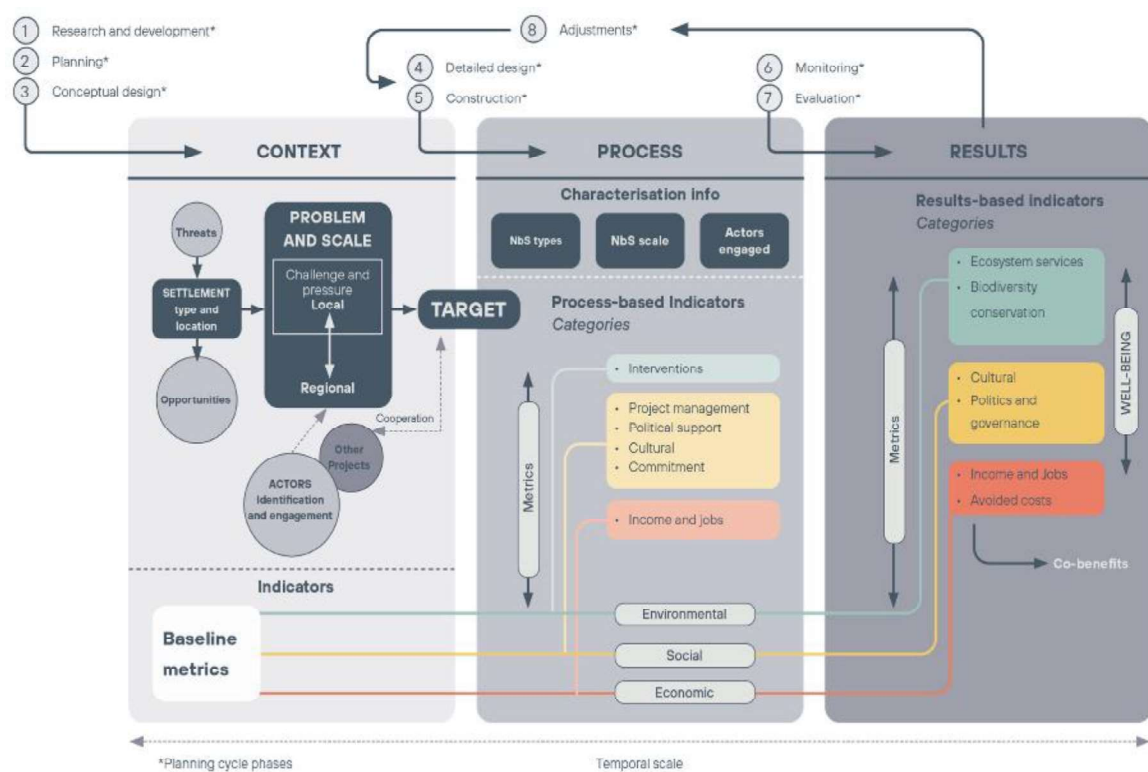
**Increasing awareness and engaging the community:** A combination of national and international NbS plans, along with the development of comprehensive policies and growing interest from municipalities and citizens, creates an enabling environment for integrating NbS into urban policies. However, better collaboration among research scientists, urban planners, designers, and other professionals is essential to prioritise NbS in urban planning and design.

## 8.4. Framework for planning and evaluation of NbS for water in peri-urban areas

A comprehensive framework for planning and evaluating NbS projects was introduced by de Lima et al. (2022), focussing on three stages—context assessment, implementation and adaptation, and evaluation of results (Figure 9). This tool helps assess the sustainability of projects and their contribution to SDGs, offering a valuable resource for enhancing water management and other NbS applications.



Figure 9: Operational framework for planning and evaluating NbS projects



Source: de Lima et al., 2022

### Stage 1: Context assessment

- Involves identifying the settlement where the NbS is implemented, defining targets, and linking them with SDGs
- Crucial for understanding peri-urban characteristics and serves as the starting point for any NbS project
- Contextualisation helps propose suitable NbS and establish baseline indicators for future evaluations

### Stage 2: NbS implementation process

- Focusses on implementing NbS with process-based indicators evaluating inputs and outputs
- Input indicators assess project interventions and activities, quantifying and qualifying invested resources
- Output indicators describe and quantify short-term results directly produced by NbS interventions
- Process-based indicators cover NbS interventions (environmental dimension), project management, social support, and economic aspects

### Stage 3: Evaluation of NbS results

- Evaluates sustainability using results-based indicators, categorised into outcomes and impacts
- Outcome indicators provide medium- to long-term results of implemented activities

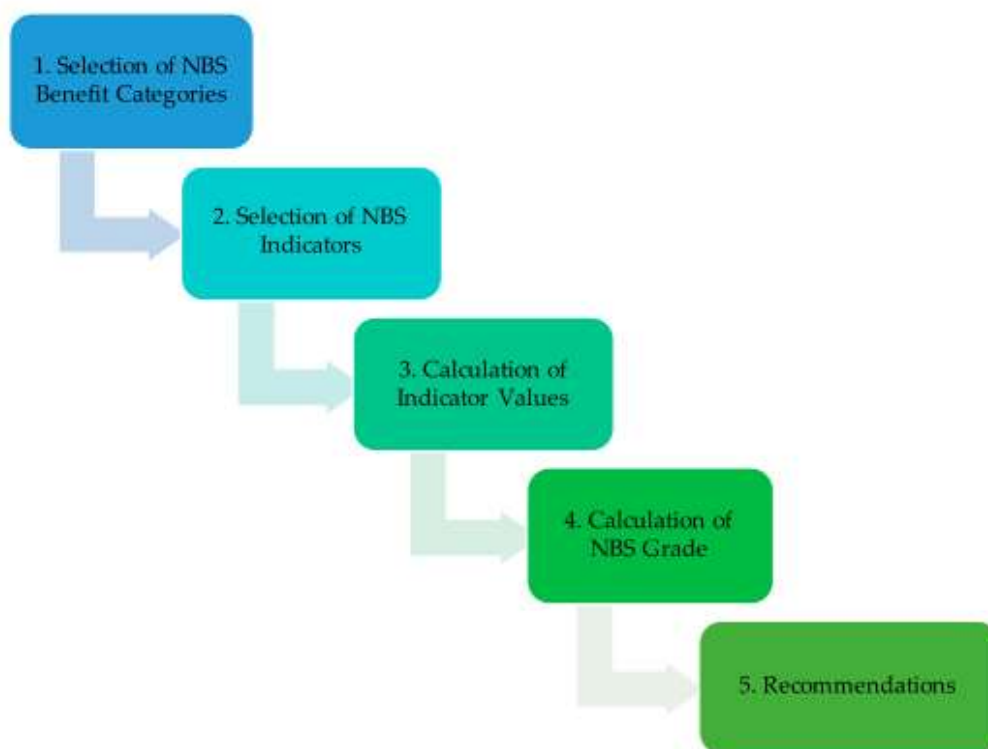
- Impact indicators indicate wider, long-term changes, including co-benefits and unintended results
- Result-based indicators cover biodiversity conservation, cultural and governance aspects, and economic factors such as income, jobs, and avoided costs

## 8.5. Framework for assessing the benefits of implemented NbS

Watkin et al. (2019) introduced an evaluation framework that qualitatively assesses and quantitatively measures the actual benefits and performance of implemented NbS. The outcomes can guide decision-makers in budgeting, maintenance planning, benefit monitoring, and resource allocation for NbS projects. The framework's efficacy was demonstrated through a case study in Thailand, wherein specific benefits, areas needing improvement, and overall NbS effectiveness were identified, showcasing its potential to optimise NbS implementation and management.

The framework comprises five primary stages (Figure 10).

Figure 10: Five stages of the framework



Source: Watkin et al., 2019

**Nbs benefit categories:** Adapted from Regenerating ECOSystems with NbS for hydro-meteorological risk rEDUCTION (RECONNECT), benefits are split into water (W), nature (N), and people (P), focussing on hydro-meteorological benefits such as flood control, water reuse, and biodiversity.

**Indicator selection:** Stakeholders pick indicators for each benefit category to reflect specific benefits.

**Indicator value calculation:** Values for each indicator are determined using data from interviews, studies, and fieldwork, quantifying the NbS impact.

**NbS grade calculation:** A grade on a scale of 1–5 is assigned based on average indicator scores, with potential weightage for more critical benefits.

**Recommendations:** These include enhancing engagement, improving data collection, optimising maintenance, and ensuring ongoing benefit monitoring.

## 8.6. NbS assessment framework for climate proofing

Calliari et al. (2019) presented a ‘dynamic’ framework that considers the impact of climate change on NbS effectiveness utilising system analysis and backcasting (Figure 11). This approach supports transformative changes rather than small steps, acknowledging the multifunctional nature of NbS and evaluating both direct and indirect benefits and costs. Aimed for use before implementation, this framework helps in choosing between NbS and traditional methods, aligning with the European Union’s environmental challenges. The framework consists of nine steps:

**Defining a baseline:** Assess current conditions, system boundaries, and interconnections to establish a baseline for NbS discussions

**Setting objectives:** Detail desired outcomes and specific goals to address the identified issues

**Identifying constraints:** Consider external influences and practical aspects such as financing strategies to achieve objectives

**Proposing actions:** Develop a range of potential actions, from traditional to nature-based or hybrid solutions, to meet objectives

**Climate resilience:** Evaluate options for their long-term viability considering climate change impacts

**Visualizing impacts:** Outline expected benefits and costs of alternatives to aid in selection

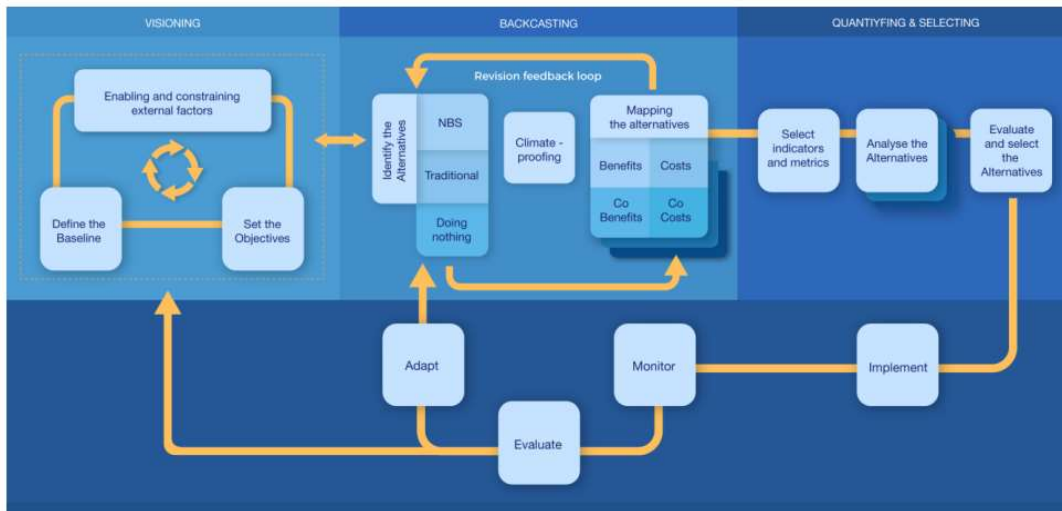
**Establishing criteria:** Choose indicators for quantitatively comparing the impacts of alternatives

**Analysis:** Utilise scientific models tailored to project needs for analysing alternatives

**Evaluation:** Apply tools including cost–benefit or multi-criteria analysis to compare alternatives and select the best option



Figure 11: Proposed assessment framework

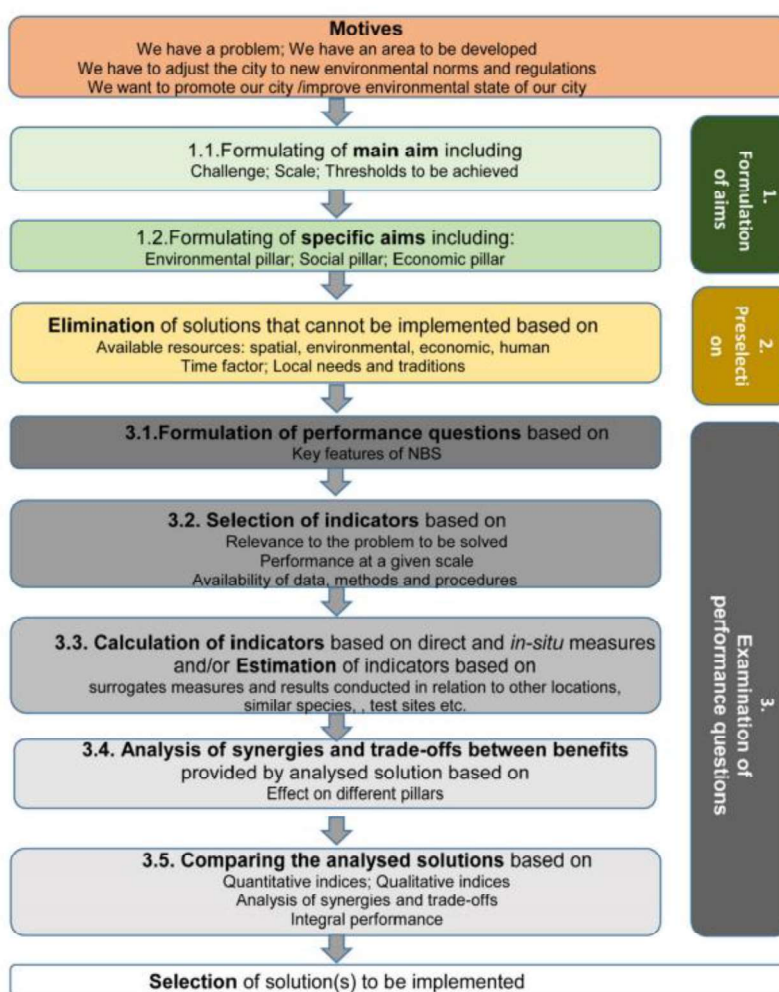


Source: Calliari et al., 2019

## 8.7. New evaluation framework for NbS projects based on the application of performance questions and indicators approach

Sowińska-Świerkosz and García (2021) introduced a new framework for evaluating NbS projects before implementation, highlighting their effectiveness and efficiency compared with traditional approaches (Figure 12). Aimed at solution selection, the framework is structured around three stages: defining project goals, filtering out unsuitable solutions, and assessing performance questions. With around 130 indicators identified for NbS evaluation, this work enriches the discussion on NbS conceptualisation and practical application, offering multi-perspective standards and guidelines to navigate the complexities of selecting NbS projects and understanding the trade-offs and synergies involved.

Figure 12: Overview of the evaluation framework



Source: Sowińska-Świerkosz and García, 2021

### Stage 1: Formulation of aims

The primary aim involves identifying the problem, determining the intervention scale, and setting target thresholds. Specific aims focus on the intervention's impact across the three core pillars of NbS (Environment, Society, and Economy).

### Stage 2: Preselection of solutions

Factors influencing solution selection include the area's size and location, environmental conditions, available funding, human resources, time constraints, and local needs/traditions. Feasible solutions are preselected from a range of NbS interventions, which may include purely green approaches, integration with existing infrastructure, or hybrid solutions.

### Stage 3: Evaluation of performance

This stage involves crafting performance questions to assess NbS projects, forming the basis for solution selection. One method is economic assessment, combining monetary costs and benefits.

After implementing the framework, a series of potential NbS projects would likely be chosen. If adequate funds and space are available, the optimal approach appears to be employing multiple interventions to address various dimensions concurrently.

## 8.8. Framework for assessing and implementing the co-benefits of NbS in urban areas

Raymond et al. (2017) formulated a comprehensive framework for evaluating the co-benefits (and costs) of NbS across socio-cultural and socio-economic systems, biodiversity, ecosystems, and climate (Figure 13). The framework consists of seven steps as follows:

**Problem identification:** Map out the issue across social, economic, ecological, and governance dimensions to determine effective NbS and alternative solutions

**Selection and assessment:** Choose NbS based on identified problems, ensuring that objectives are flexible yet specific, measurable, achievable, realistic, and time-bound

**Designing implementation processes:** Ensure that processes are open and transparent, promoting cross-sectoral dialogue and adaptive management in urban ecosystems

**NbS implementation:** Implement NbS with multidisciplinary teams, integrating green solutions with grey infrastructure as appropriate and considering all associated costs and benefits

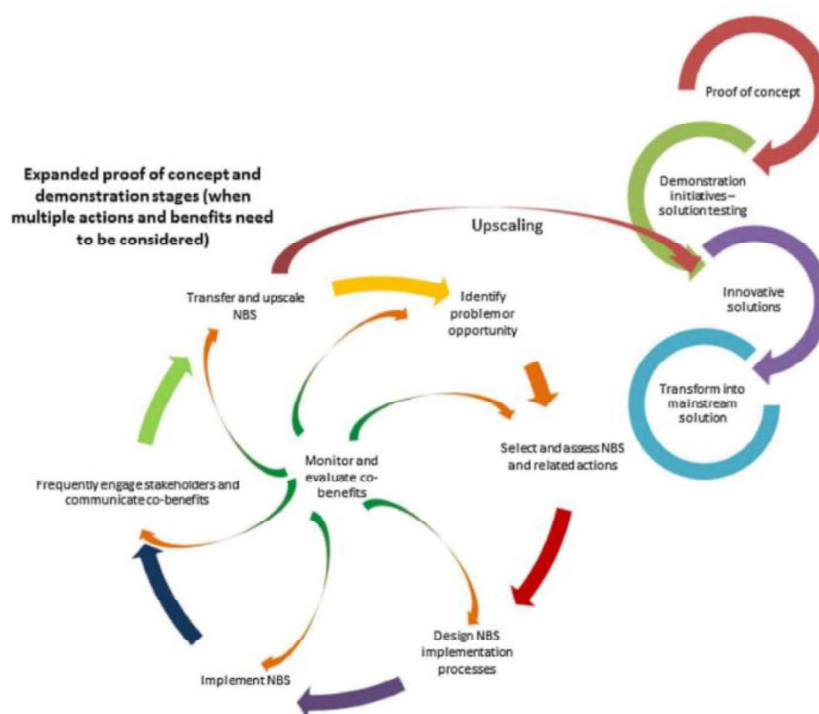
**Stakeholder engagement:** Continuously communicate co-benefits to stakeholders, using both top-down and bottom-up approaches and fostering collaboration through public-private partnerships and dialogue platforms

**Upscaling NbS:** Increase confidence in NbS through upscaling, leveraging multi-actor partnerships for evidence-based benefits, addressing implementation challenges, and systematically integrating NbS into governance

**Monitoring and evaluation:** Continuously monitor the implementation, evaluating co-benefits, stakeholder perception, and responsiveness using targeted indicators for environmental performance, health, participation, and financial viability



Figure 13: Overview of the NbS co-benefits framework



## 8.9. Pathway for increasing NbS in Nationally Determined Contributions (NDCs)

The UNDP Report assists governments in identifying NbS for cost-effective climate change mitigation and adaptation, offering multiple co-benefits (Figure 14). It supports countries in enhancing the resilience of their NDCs, particularly when faced with challenges such as limited data and resources for NDC implementation.

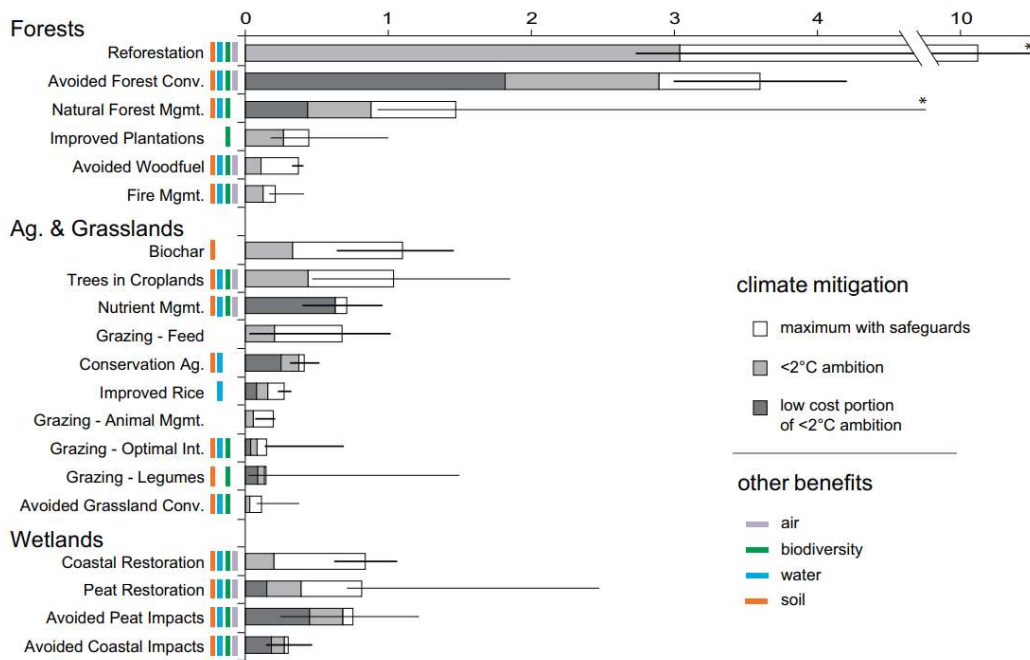
The report outlines seven steps for governments:

- Understanding the national context of GHG accounting
- Reviewing existing nature-based actions within national legal and institutional frameworks, including policies, laws, and regulations
- Assessing nature-based actions in the current NDCs
- Quickly analysing the climate change mitigation and adaptation potential of existing nature-based actions
- Aligning NbS pathways with measurable actions and identifying opportunities to strengthen NDCs using spatial data
- Integrating measurable nature-based actions into the NDCs
- Enhancing or establishing enabling conditions to support NbS integration into the NDCs

This pathway provides guidance for national governments, in both developed and developing countries, along with relevant ministries and sub-national authorities, to align their efforts with national goals. It highlights the need for coordinated action to incorporate NbS into the NDCs and suggests opportunities for collaboration with

companies, NGOs, indigenous peoples, and local communities to improve nature-based actions.

Figure 14: Climate change mitigation potential of 20 natural climate pathways



Source: UNDP, 2019

The frameworks represent a spectrum of scope and applications. For instance, the IUCN Global Standard offers a user-friendly guideline applicable across various settings and scales, from urban areas to protected landscapes, whereas the World Bank Guideline and REGREEN focus more specifically on urban settings and the financial valuation of NbS.

Each framework presents criteria and indicators with varying degrees of flexibility for designing and evaluating NbS based on their outlined scope. Some adopt continuous monitoring and evaluation, promoting iterative learning and adjustment, whereas others offer a tiered assessment strategy through various project phases, integrating NbS into urban planning. Economic valuation and cost-benefit analyses are also growing domains of interest in NbS, with some frameworks considering economic viability alongside social and environmental considerations.

As we delve into the specifics of these frameworks and their applications in various contexts, it becomes evident that the relevance of NbS in today's world cannot be overstated. The nine frameworks prioritise enhancing ecological, social, and economic sustainability, aiming to improve resilience against climate change and other environmental threats. They underscore the importance of involving diverse stakeholders, including local communities, governments, and private sectors, ensuring that NbS are inclusive and equitable. Additionally, there is a strong emphasis on embedding NbS into existing policy frameworks and aligning them with national and international environmental goals to ensure long-term viability and scalability.