



DeltAlliance

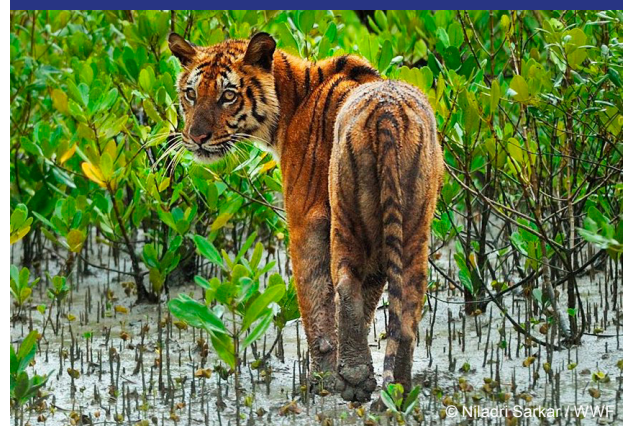


# RESILIENT ASIAN DELTAS INITIATIVE

## SCALING UP NATURE-BASED SOLUTIONS

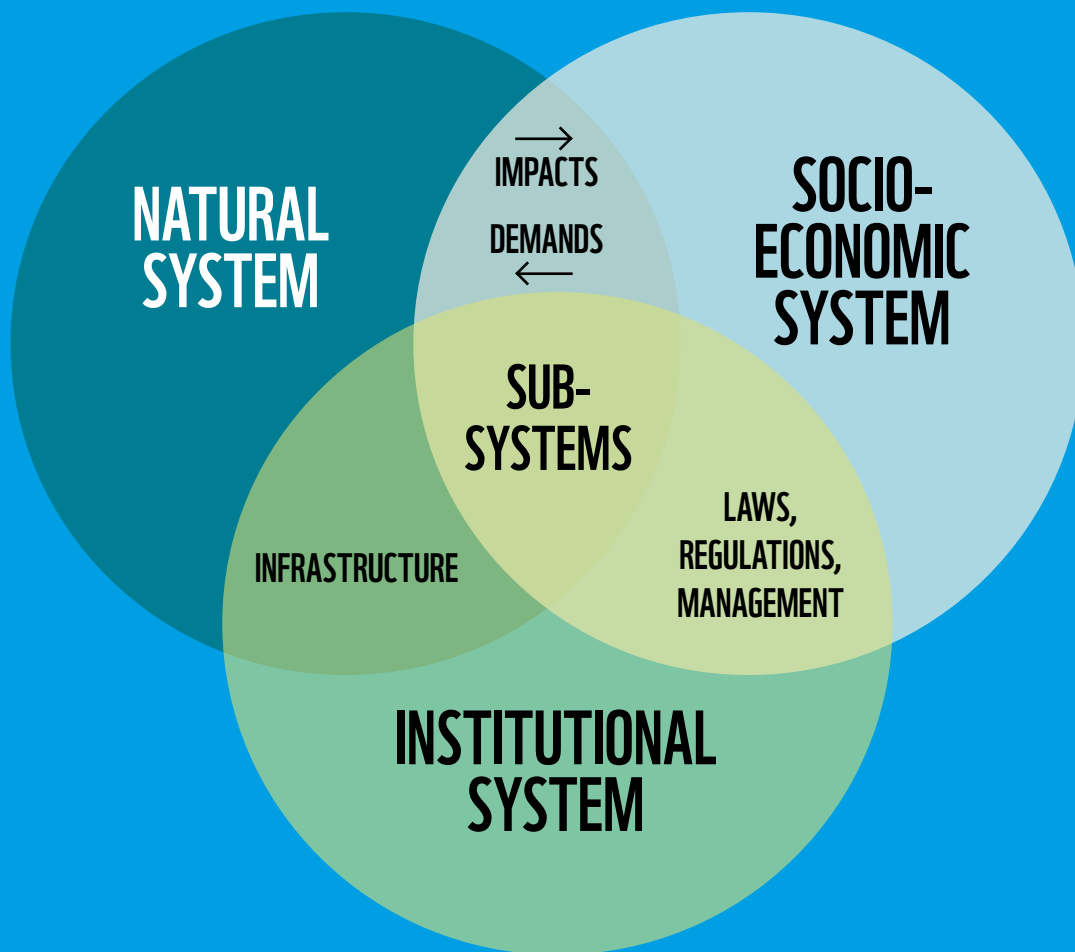
Asia's great deltas are sinking and shrinking, threatening the livelihoods of hundreds of millions of people and the survival of their rich biodiversity. WWF's ambitious Resilient Asian Deltas (RAD) initiative has been designed to tackle the systemic threats to the delta by working with partners to develop, fund and implement nature-based solutions (NbS). This briefing provides WWF offices engaged with RAD with high-level insights into the policy and governance mechanisms that will enable NbS at scale in Asia's deltas. For upscaling NbS to entire deltas, several challenges need to be overcome, especially regarding governance, financing, and supportive institutional and legal arrangements.

Home to over 400 million people and a wealth of biodiversity, Asia's great deltas are critical to the economies, food security and sustainable development of the entire continent.



# AN INTEGRATED APPROACH

Developing and implementing NbS in deltas should be based on a broad upstream-downstream system perspective, addressing aspects of all three interlinked subsystems: biophysical, governance and socio-economic. The conditions of the subsystems should strongly guide optimized strategies and interventions for river, coastal and delta management.



## BIOPHYSICAL SYSTEM

**It is of utmost importance that NbS complies with the principles of ecological restoration.** Restoration activities should start with a proper habitat assessment that carefully sets the restoration objectives. For Asian deltas, the following delta ecosystems will determine possible NbS: Wetlands & floodplains, sandy beach and dune systems, mangrove systems, and coral reef and seagrass systems.

Distinct hydro and morphodynamic processes that govern and shape features within the ecosystems need to be carefully examined. This will help determine if rehabilitation or restoration measures should be implemented on the existing system, or if alternative measures are needed.

Deltaic ecosystems do not occur in isolation, but rather as part of larger ecosystems in which they play an integral role. This highlights the need for an integrated approach. Despite evidence that supports the existence of a reciprocal relationship between riverscapes, deltascapes and seascapes, research on ecosystem effectiveness is often conducted on separated ecosystems, and not as the synergistic system they are. **The traditional focus on separate ecosystems for NbS will not yield desired results.** A vision for NbS implementation at delta or catchment scale is needed, encompassing river basin and delta management.



# INSTITUTIONAL SYSTEM

Successfully addressing delta and river management requires the re-establishment of objectives and the redesign of governance structures. Doing so will help achieve alignment with project goals and facilitate inclusive decision making. However, realization of these ideas requires people to be able to influence governments and stakeholders, and mobilize resources. This will require connecting to different sectors and regions to facilitate the negotiation of trade-offs. **Institutional collaboration is key to enable large-scale implementation of NbS.**

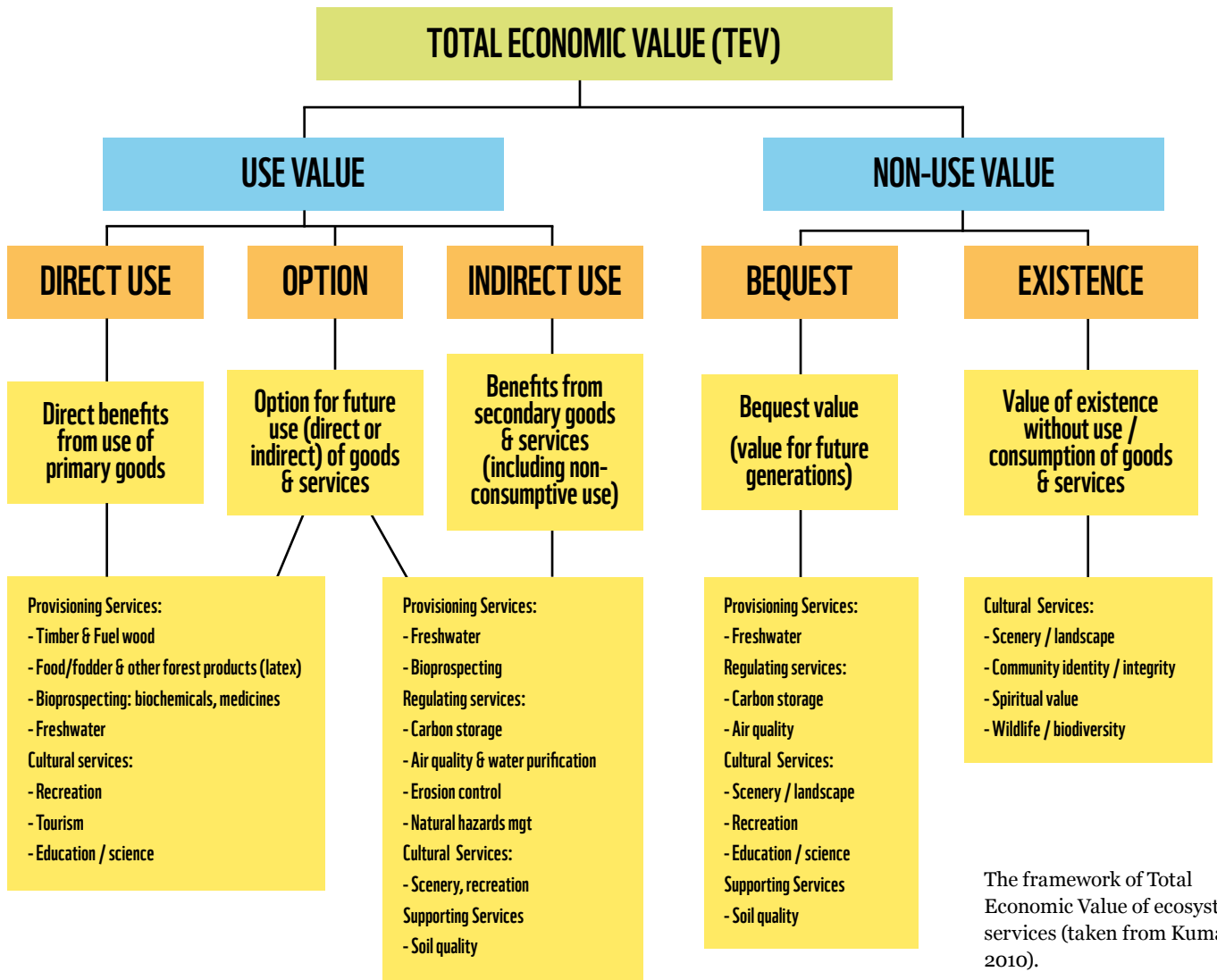
Coordinated upscaling of local NbS projects with multi-sectoral objectives requires continued mobilization of financial and human resources at different operational levels. This will result in a pipeline of interconnected NbS and supporting implementation projects. Most delta planning projects in Asian deltas currently lack this integrated landscape approach: linking different scale levels and objectives, and encompassing the full portfolio of interventions. **This is potentially a crucial role that WWF can play to ensure that NbS can be scaled.**

# SOCIO-ECONOMIC SYSTEM

To fully appreciate the linkages between socio-economic and ecological systems, **valuation of ecosystems services combined with other economic valuation is an essential first step.** To account for social equity, beneficiaries of economic benefits and ecosystem services need to be mapped. In addition, a list of beneficiaries of direct and indirect benefits, and an inventory of co-benefits, will help to translate the economic analysis into a financing strategy.

For NbS, besides local stakeholders who directly profit from co-benefits, downstream users or cities may profit as well. National governments may profit through achieving international commitments, such as SDGs or Climate Goals. Hence, this opens routes for alternative financing constructions on multiple institutional levels, ranging from international financing to local community funds.





The framework of Total Economic Value of ecosystem services (taken from Kumar, 2010).

Further developing financing project models that consider non-monetary values and co-benefits could provide attractive information for investors. These models can showcase how NbS generate returns on investment. ROI can include avoided costs (such as flood damage) but, more importantly, also include actual profits like an increase in crop yields and tourism as well as the benefits from safeguarding natural resources (such as water availability and fertile soils).

## GOVERNANCE AND FINANCIAL CONSIDERATIONS FOR UPSCALING NBS: A LANDSCAPE APPROACH

From an economic point-of-view, NbS can attract a diversity of financing sources and produce both monetizable and non-monetizable benefits. However, **single NbS solutions can only deliver the full value of their potential when integrated in a wider landscape planning process.** The upscaling of NbS depends on the articulation of a long-term vision and strategy between key decision-makers, which can lead to the sustainable development of the catchment or delta.

It requires a technical and social consensus on the practicality and value of green infrastructure assets, which is crucial in steering the governance process and investment commitments for NbS. As not all NbS projects are bankable or provide sufficient economic incentive to attract private investments, reviewing and including non-direct benefits (or co-benefits) can help make a stronger business case for NbS.

**Upscaling NbS demands framing project investments as elements of landscape portfolios, achieving a financial trade-off between profit and environmentally or socially valuable projects.** The wider governance framework will consist of agreements, negotiations, and compromises between different actors. Commitment at the governance level secures the enabling conditions upon which the public sector, philanthropic or return-seeking investors would be willing to support NbS project investments.

The long-term sustainability of a landscape approach will depend on the degree of commitment between actors pooling resources, seizing value opportunities and addressing competing demands between land and river use and other socio-economic values.

Upscaling NbS not only requires investments in green assets, but also a structured and articulated landscape governance process that will enable the process. Alongside, it is worthwhile to create enabling investments and environments that encourage and support the collaboration process between the different actors. The success of landscape investments relies on the degree of governance maturity based on five key elements:

- a. Strength of multi-stakeholder engagement
- b. Shared understanding
- c. Collaborative planning
- d. Effective implementation
- e. Monitoring for adaptive management and accountability

**A structured and well articulated landscape governance process increases the visibility of NbS value,** which in turn, brings more certainty to actors and their willingness to invest in green infrastructure.

Level of cooperation	Multi-stakeholder engagement	Shared understanding	Collaborative planning	Effective implementation	Monitoring
Low	Ad hoc consultation, meetings	Public information from landscape stakeholders, easily accessible	An agreed landscape vision document	Landscape actors consider collaborative plans when making individual decisions	High-level monitoring, public reporting
Medium	Multi-stakeholder dialogue and regular meetings by each actor to consider/respond to inputs from other landscape stakeholders	Above + detailed information on land management provided to other landscape stakeholders	Above + detailed landscape strategic plan/program outlining joint activities	Above + specific commitments and contributions to achieving agreed landscape objectives	Above + specific commitments/ contributions to achieving agreed landscape objectives
High	Above + formal mechanisms for stakeholder representation, formal rules for decision making	Above + mechanisms for requesting information from other landscape stakeholders	Above + clear accountability framework for actor compliance with landscape plan including monitoring and sanctioning	Above + detailed reporting on the implementation of the collaborative plan on the individual decision of relevance to collaborative plans	Detailed monitoring and evaluation of strategy; positive conditional incentives; negative sanctions

Overview of the five articulated elements of landscape investment (Denier et al., 2015).

A landscape management process can be improved by incorporating a framework in which financial, environmental and social ambitions will be achieved within a specific time frame. The Theory of Change (ToC) which defines long-term goals will be useful here; the process to reach a desired vision is worked on backwards, highlighting specific conditions that need to be achieved before such goals can be met. Implementing a ToC can reap the following benefits:

- The framework can be utilized to assess whether proposed investment projects will have clear paths for reaching subsequent environmental or social ambitions;
- Regarded by climate change facilities and impact investors as the preliminary stage for building a convincing investment proposal for NbS;
- Funding bodies such as the Green Climate Fund demand reasoning from the ToC methodology in order to reach climate change or adaptation goals; and
- It forms part of the assessment component for proposal applications to the fund as well as project reviews

ToC methodology also needs to include capacity building related to the five elements in the landscape governance approach. This will aid in achieving integrated delta management with NbS at the core.

**To bring NbS beyond the project level, landscape governance will likely require one or more financing coordinating entities.** One fundamental aspect is that any landscape investment made will need to align with the wider landscape context. For example, the success of downstream restoration measures may depend on sediment availability influenced by upstream activities. This suggests a higher level of collaboration required between the relevant governing entities influencing both upstream and downstream dynamics.

A misalignment between the sphere of influence of the governing entity and the spatial extent of the required physical intervention would prevent NbS from reaching its full potential. Organizational capacity will also need to be characterized for the governing entity's ability to enable collaboration beyond its geographical scope.

## **NEGOTIATION AMONG ACTORS TO UPSCALE NBS:**

By **linking socio-economic activities of interdependent stakeholders to the underlying ecosystem services**, the negotiation process becomes essential in upscaling NbS in a landscape context. Negotiation within landscape governance is often achieved between actors or through valuing NbS in order to leverage funds or attract investments. Actors can be categorised in the following ways:

- a. Polluters (payers)
- b. Beneficiaries (payers)
- c. Stewards (earners)
- d. Innovators (earners)

By identifying these actors, an economic rationale can be created for NbS and the payments - one method being the 'polluter pays' principle - can constitute a basis for funding. Organizing NbS projects in this manner can also provide structure to the financing needs as well as the relevant sources of financing.

**Creating a financing strategy for funding NbS interventions remains complementary to the landscape governance process.** The strategy should support the overall strategic vision, as well as the negotiations between actors. Part of this could involve restructuring NBS as asset investment, so that the project can be self-sustaining.

Restructuring NbS in this way allows green interventions to remain attractive for private or ROI seeking investors. However, private financing is not as accessible if NbS interventions cannot translate into financial pay-offs, despite addressing socio-environmental needs. Therefore, building a business case is highly dependent on the characteristics of the identified ecosystem values.





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## CREATING VALUE IN NBS

As proposed by the Financing Framework for Water Security, the first step to develop the business case of a NBS investment is to **define the main functions and services the project will create and categorize these in types of economic goods.**

Using the principles of excludability and subtractability, goods or services can be categorized in this manner to clarify how projects can continue delivering sustainable value both in economic and environmental terms. Excludability refers to the degree in which a good can be limited to users (e.g. imposing entrance fees for access to or usage of a landscape). Subtractability refers to the degree of competition for the good or service such that consumption reduces the ability of another user to consume the good or service.

Framing NbS as a source of economic value is a complex activity and will sometimes require further categorizing of socio-economic values of ecosystem services. Understanding the economic nature of goods or services provided by NbS will also require making a differentiation between non-monetizable and non-direct monetizable benefits, as well as non-use benefits or co-benefits, so that investments can be better classified.

In the event that the main function of the project is not of monetizable value, NbS' non-direct monetizable benefits can be made explicit in this process. Where non-direct benefits (or co-benefits) are monetizable, these can be used to leverage additional funding from private actors.

Once the value drivers have been identified and made explicit, each project should be characterized in terms of the relevant elements for guaranteeing their implementation capacity. **The project agreement should be structured according to their lifecycle, cost generation activities, construction and operation risks, and development of indicators to monitor project delivery and service maintenance.** Incorporating project performance indicators can help make a more convincing case with investors who are used to grey solutions.

# THE WAY FORWARD FOR ASIAN DELTAS

Asia's deltas are critically important for societies and economies, yet they are all sinking and shrinking. Investing in large-scale Nature-based Solutions will drive the systemic change necessary to tackle the challenges they all face and build resilience.

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**Biophysical:** Deltas are clearly defined biophysical areas. These dynamic landscapes share specific characteristics and challenges, making a landscape approach to NbS even more relevant.

*Recommendations:*

- a. Clear assessments should be made on the biophysical boundary conditions required for specific NbS to be successful (such as the availability and quality of sediment delivery or rate of sea level rise); and
- b. Clear and measurable indicators for effectiveness of NbS need to be developed.

**Institutional:** An effective governance structure along with strong organizational capacity, and technical and financial literacy are required to ensure the success of NbS. A master planning approach can be adopted ensuring that all projects contribute to multidisciplinary master plan objectives. Regular monitoring and evaluation activities should be performed, so that lessons learnt from past projects can be applied in future iterations.

*Recommendations:*

- a. NbS are inherently appealing to decision-makers as they support multiple policy goals, and should be advocated for as such;
- b. Enable and enforce multi-level, multi-sectoral and multi-scale cooperation to optimize implementation of NbS through a landscape approach;
- c. Increase capacity building on the topic of NbS and improve awareness of it through top-down and bottom-up approaches;
- d. Regular monitoring and evaluation activities are required, addressing good (and bad) practice; and
- e. Landscape governance will likely require one or more financing coordinating entities, allowing governing bodies to engage with different investors and streamlining the coordination of investments beyond the scale of single projects.

**Socio-economic:** Greater corporate and investor awareness of the need to act collectively at the landscape level is critical to building resilience. Non-direct benefits of NbS should be quantified and integrated to make a stronger case for NbS, even on a landscape-scale.

*Recommendations:*

- a. Financiers and investors need to be involved in NbS from an early stage to raise awareness about short and long term (co)benefits and determine the most appropriate types of finance streams (public, private, international development & blended finance);
- b. Both direct and non-direct benefits need to be better elaborated for NbS through appropriate metrics and indicators;
- c. NbS benefits can be hard to quantify - let alone their co-benefits - but this is necessary to provide better perspectives on risk profiles and return on investments (including avoided costs) so as to better leverage private financing;
- d. Avoiding ecosystem degradation, loss of fertile land and associated livelihoods should also be taken into account when identifying the benefits of NbS;
- e. Government and accelerator funding calls should be transparent and include a science and monitoring component that emphasises an integrated system approach - as this will help prevent financially attractive solutions from creating potentially conflicting outcomes (i.e. obstructing sustainable development or social equity); and
- f. Public-Private-Partnerships (PPP) must be enabled or facilitated to improve the involvement of the private sector as they can serve as a strong, sustainable financing mechanism for NbS.