

# ACCELERATING ADAPTATION THROUGH BUILDING WITH NATURE IN ASIA



Through the Building with Nature Asia initiative we accelerate adaptation by integrating nature-based solutions into water related infrastructure in Asia to build climate resilient landscapes that benefit people and nature.

## THE CHALLENGE WE FACE

Deltas, rivers, lakes and coastlines in Asia are home to hundreds of millions of people and support abundant and unique nature. Wetlands in these landscapes form natural buffers against impacts of sea level rise, floods and storms, and are vital for water and food security and local livelihoods.

But rapid urbanization and economic growth are coupled with increasingly devastating impacts from ecosystem degradation and climate change. Sadly this situation is exacerbated by the often single solution focused traditional response to water-mediated risks.

Decision makers face the challenge to deliver water infrastructure that protects coast, deltas, rivers and lakes, while benefiting nature and society and increasing resilience to climate impacts. Repeated calls are being made for the adoption of nature-based solutions within the suite of response options that are inclusive and have wider societal benefits.

## SHIFT TO INTEGRATED SOLUTIONS

Building with Nature integrates ecosystems services into water infrastructure practice and has proven itself as a successful participative approach for coastal, river, lake and delta management. It combines ecosystem restoration and engineered solutions in an optimal mix.

Building with Nature solutions can accelerate adaptation, enhance water and food supply, livelihoods, carbon storage, biodiversity conservation and health. It represents a paradigm shift from minimising negative impacts to maximising positive benefits for society and nature. As a result, there is growing recognition for Building with Nature as a leading climate change adaptation strategy.

With the growing threat of climate change and other crises such as the COVID-19 pandemic and hazards from the loss of wetlands, it is vital we scale up these necessary adaptation measures as soon as possible. The Building with Nature Asia Initiative responds to this by building climate resilient landscapes to benefit millions of people in Asia and nature.



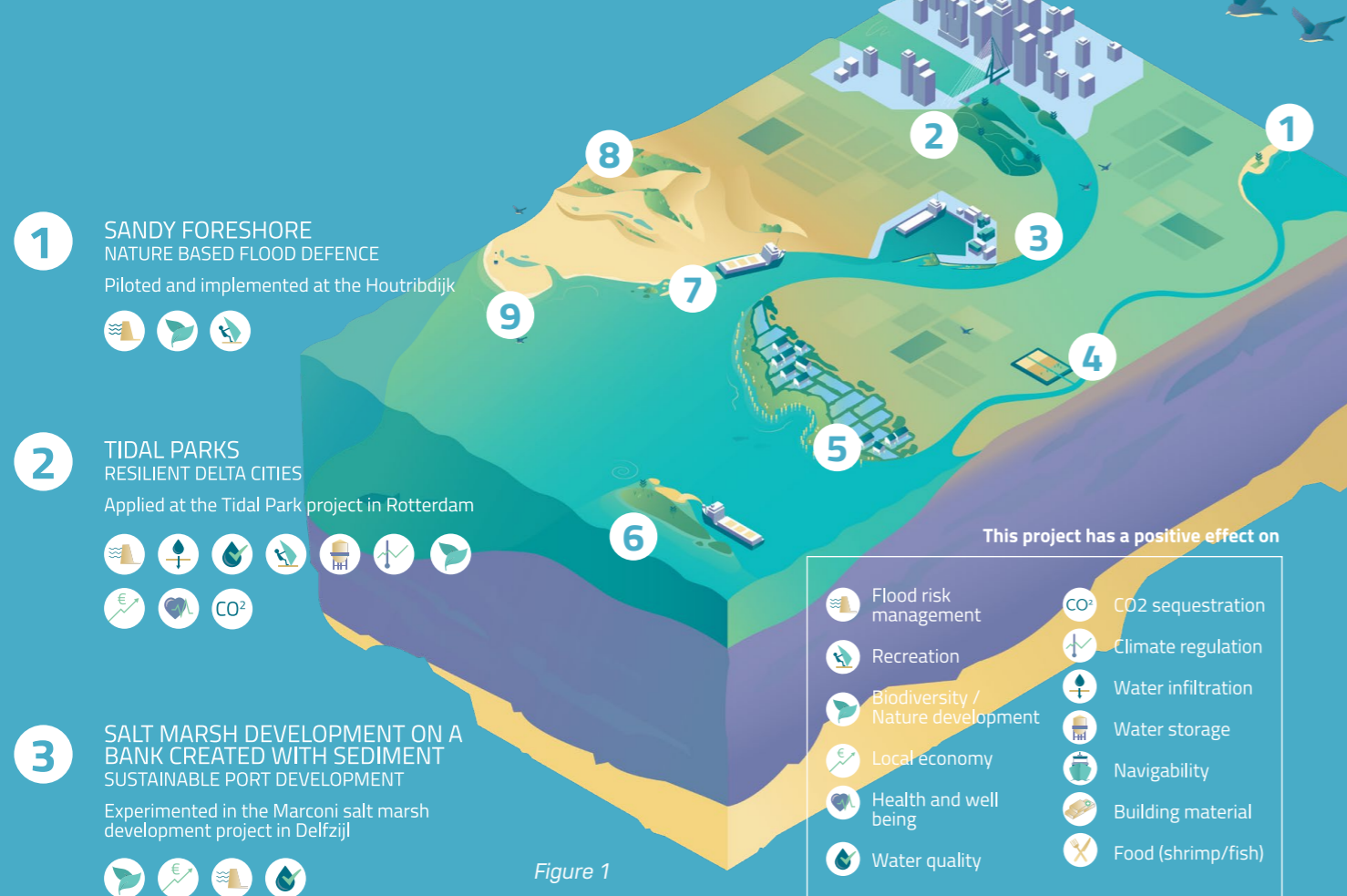


Figure 1

**1 SANDY FORESHORE**  
NATURE BASED FLOOD DEFENCE  
Piloted and implemented at the Houtribdijk

**2 TIDAL PARKS**  
RESILIENT DELTA CITIES  
Applied at the Tidal Park project in Rotterdam

**3 SALT MARSH DEVELOPMENT ON A BANK CREATED WITH SEDIMENT**  
SUSTAINABLE PORT DEVELOPMENT  
Experimented in the Marconi salt marsh development project in Delfzijl

**4 CLAY RIPENER**  
SUSTAINABLE PORT DEVELOPMENT  
Piloted in the Clay Ripener project in the Eems Dollard estuary

**5 VEGETATION RECOVERY**  
ECOSYSTEM RESTORATION  
Implemented and researched in Demak, Indonesia

**6 NATURAL ISLANDS**  
ECOSYSTEM RESTORATION  
Applied and studied in the Marker Wadden project in Markermeer

**7 MUD MOTOR**  
SUSTAINABLE PORT DEVELOPMENT  
Executed and researched in the Mud Motor project in Harlingen

**8 STIMULATING DUNE HABITAT DEVELOPMENT**  
NATURE BASED FLOOD DEFENCE  
Monitored at the Hondsbossche Dunes

**9 MEGA NOURISHMENT**  
NATURE BASED FLOOD DEFENCE  
Extensively studied at the Sand Motor in Kijkduin

- This project has a positive effect on
- Flood risk management
  - Recreation
  - Biodiversity / Nature development
  - Local economy
  - Health and well being
  - Water quality
  - CO<sub>2</sub> sequestration
  - Climate regulation
  - Water infiltration
  - Water storage
  - Navigability
  - Building material
  - Food (shrimp/fish)

## BUILDING WITH NATURE INDONESIA

Since 2012, Indonesia implements the Building with Nature approach in Demak, Central Java in collaboration with Wetlands International, EcoShape, local and international partners and local communities. Hard infrastructures to protect the coastline from flooding exacerbated erosion, were unstable and expensive and failed to deliver vital services such as fisheries that the original mangrove belt provided. Communities suffered from extensive flooding, lost income and were even evacuated.

mangrove restoration combined with development of sustainable aquaculture and other livelihoods. Communities were empowered to join policy dialogues to express their needs, successfully securing additional government support for these measures.

What started as a small experiment has grown into a large scale initiative along a 20km eroding coastline. The consortium enhances coastal resilience through

Through capacity building, knowledge exchange and embedding Building with Nature into policy and planning, the project supports the replication and scaling up of the approach to other rural and urban areas in Indonesia and worldwide.

[www.indonesia.buildingwithnature.nl](http://www.indonesia.buildingwithnature.nl)



The Building with Nature Asia Initiative builds on a wide range of inspiring Building with Nature concepts and pilots, design guidelines and business cases by the EcoShape Building with Nature Platform (see figure 1).

The approach is being used in the Netherlands at a large scale for managing its extensive coastal and river works and is increasingly embraced in Indonesia. Similar projects are implemented in Singapore, Florida, Vietnam and Suriname.

The Building with Nature initiative contributes to many of the Sustainable Development Goals:







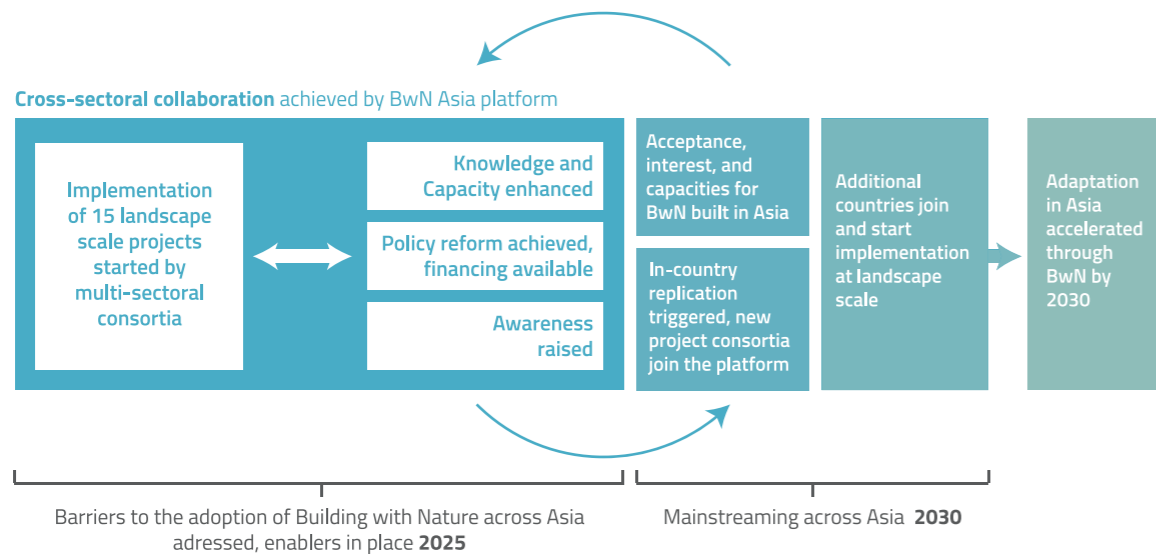
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**WE ENVISION ACCELERATING ADAPTATION BY:**

Adoption of Building with Nature as a socially and environmentally inclusive engineering approach that transforms the engineering sector across Asia to work with nature rather than against nature. This will benefit tens of millions of people in cities and settlements along vulnerable Asian coasts, lakes, rivers and deltas, while also inspiring global adaptation and seeking synergies with enhancing water and food security climate change mitigation, biodiversity conservation, disaster risk reduction and sustainable development.

**WE WILL:**

- Create 15 climate resilient landscapes in 5 countries by 2030, each inspiring further spin-off
- Establish a Building with Nature Asia platform to mobilize public and private actors and support implementation and upscaling



**ABDUL MUHARI**  
GOVERNMENT OF  
INDONESIA

"With the Building with Nature approach we have been working on alternative, more inclusive and sustainable ways to solve coastal erosion problems in Indonesia. After tentative beginnings in Demak, the Indonesian Ministry of Marine Affairs and Fisheries has embraced Building with Nature and is scaling up rapidly. We are eager to share our knowledge and experiences Indonesia with other Asian government Ministers and decision-makers from key sectors."



**PATRICK VERKOOIJEN**  
CHIEF EXECUTIVE OFFICER  
OF THE GLOBAL CENTER  
ON ADAPTATION AND  
MANAGING PARTNER OF  
THE GLOBAL COMMISSION  
ON ADAPTATION

"Adaptation that works with nature has an enormous pay-off, both in direct economic terms and in terms of less easily quantified social and economic benefits. Initiatives like Building with Nature that improve climate resilience must be widely adopted. In collaboration with our office in Beijing, I hope other countries in Asia will learn from Indonesia's experiences to adopt and scale up existing adaptation solutions. No country can tackle this global challenge alone."



**ANNADEL CABANBAN**  
WETLANDS  
INTERNATIONAL  
PHILIPPINES

"In the Philippines Building with Nature solutions are needed where fluvial and coastal flooding occurs, such as in Manila Bay or in the Agusan River basin in Mindanao. Our people are affected by tropical storms and typhoons multiple times a year, while mangrove forests, marshes and other wetlands are disappearing. We are introducing and piloting Building with Nature solutions to reduce landslides, riverine flooding, erosion of upstream river banks, and protect the settlements and livelihoods of coastal communities."



**DATO' NOR HISHAM**  
DIRECTOR GENERAL,  
DEPARTMENT OF  
IRRIGATION AND DRAINAGE  
MALAYSIA

"There is growing awareness in Malaysia that the traditional approach of just using hard hydraulic structures to mitigate coastal and water challenges is inadequate and in the light of the need to accelerate adaption to climate change, efforts are now being taken to integrate Building with Nature solutions with engineering solutions. Such solutions will be environment-friendly, more sustainable, more aesthetic and likely more cost-effective."

**THE BENEFITS OF BUILDING WITH NATURE**

**CLIMATE-RESILIENT HYDRAULIC INFRASTRUCTURE SOLUTIONS TO BOOST RESILIENCE**

Effective adaptive solutions that allow flexibility to take potential future changes into account.

**MULTIPLE CO-BENEFITS**

Water and food security, livelihood and job creation, biodiversity conservation, enhanced health conditions and carbon storage.

**STRONG BUSINESS CASE**

Reduce costs on a life-cycle basis compared to

traditional solutions (especially attractive when funds for infrastructure development are scarce), de-risk investments, comply with sustainability commitments, develop a competitive edge and a license to operate.

**NO REGRET APPROACH**

By applying adaptive management and incremental development.

**INCLUSIVITY**

Interdisciplinary cooperation and active involvement of stakeholders in projects.





First Building with Nature Asia regional workshop, July 2019

Building with Nature Asia is a regional initiative convened in Indonesia, Philippines, India, Malaysia and China, initiated by Wetlands International and the Indonesian Ministry of Marine Affairs and Fisheries in collaboration with EcoShape, One Architecture and the Global Center on Adaptation.

Join us and support our initiative! We welcome interested countries and partners to join and help resource the initiative.

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one architecture



GLOBAL  
CENTER ON  
ADAPTATION

SUPPORTED BY:



Federal Ministry for the  
Environment, Nature Conservation,  
Building and Nuclear Safety



based on a decision of the German Bundestag