

What are nature-based solutions?



Solutions inspired and supported by nature



Nature-based solutions (Nbs) are strategies that work with nature to deliver multiple long-term co-benefits while addressing the climate crisis.

Nature-based solutions have a distinct role to play in improving human and societal well-being by sustainably managing natural ecosystems in a cost-effective way. Nbs can be employed in terrestrial food production, forestry, and timber management, or in freshwater, coastal, and marine ecosystems, to enhance food production, store carbon, and preserve the environment, amongst other benefits.^[1]



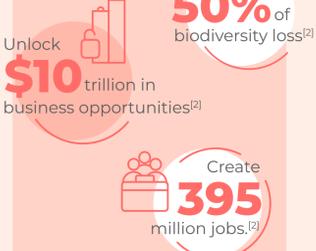
Why do nature-based solutions matter?

Potential of Nbs : A three-pronged role

Enhance resilience

Nbs contribute to multiple Sustainable Development Goals and enhance long-term adaptive capacity to climate change.

By 2030, Nbs can:



Mangrove forests, for example, save an estimated \$80 billion per year in avoided losses from coastal flooding globally, and protect up to 18 million people.^[3]

Mitigate climate change

Nbs provide a cost-effective and long-term means to reduce emissions.

37% of the globally pledged carbon emissions reduction can be achieved using Nbs cost-effectively by 2030.^[4]

India can sequester 3 to 4.5 gigatons of above-ground carbon by 2040 by protecting forests and restoring farms, forests, and other landscapes over 140 million hectares.^[5]



Enhance climate justice and equity

Nbs produce benefits for the most vulnerable.

17% of the total carbon stored in forest lands is managed by indigenous people and communities.^[6]

350 million indigenous people can be supported by securing land tenure.^[7]

Recognising that there can be no solution to problems caused by unsustainable agricultural, forestry, and fisheries systems without the explicit recognition of rights, 14 countries and philanthropic donors at CoP26 pledged at least \$1.7 billion from 2021 to 2025 to advance indigenous and local communities' forest tenure rights and support their role as guardians of nature.

There is a strong link between nature, climate, human, and planetary wellbeing. Nature is an engine of economic growth, but it continues to be degraded. This is adversely affecting human well-being and will continue to, even if growth, as measured by GDP, continues to rise. Over half the world's total GDP is moderately or highly dependent on nature and its services and, as a result, exposed to risks from nature loss. For example, construction (\$4 trillion), agriculture (\$2.5 trillion) and food and beverages (\$1.4 trillion) are the three largest sectors that depend most on nature.^[8]

However, to date, nearly **\$133 billion/year** is channelised into Nbs using 2020 as base year^[9]. There exists a huge funding gap: According to the Global Commission

on Adaptation (2021), Nbs constituted only **0.6-1.5%** of the total climate finance flows of

\$579 billion in 2020 [10]. Furthermore, there is a massive funding gap particularly for halting biodiversity decline,

estimated to be **\$722 – 967 billion** per year until 2030.^[11]

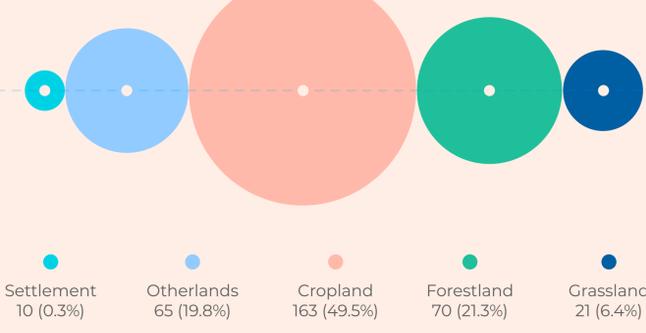
Public funds dominate global Nbs financing (86%) while private contributions remain minimal at 14%^[12]

"Looking to the future, investments in Nbs ought to at least triple in real terms by 2030 and increase four-fold by 2050 if the world is to meet its climate change, biodiversity, and land degradation targets."^[9]

What is the potential of land use nature-based solutions in India?

Agriculture and forestry, which together occupy 71% of India's total land, support the livelihoods of 700 million people^[13,14].

Area under different types of land use in India (million hectares, 2014)



The Government of India also estimates that at least 350M people depend on forests for needs beyond primary income, such as fuelwood, fodder, construction, labour opportunities and other forest products.



350 million people depend on forests

Nbs hold tremendous potential for restoration, sustainable management of natural resources and critical habitats, and halting degradation and desertification. Through Nbs practices, Indian farmers can ensure resilient food production systems that respond to extreme weather events.

An enabling policy framework exists that promotes sustainable agriculture and forestry aligned with Nbs exists in India, in line with the global commitments under its Nationally Determined Contributions, Bonn Challenge, and Land Degradation Neutrality pledge to restore land. Enhanced collaboration, assured long term funding, and strengthening of social safeguards in existing policies can encourage the adoption of Nbs at scale.

What are some investable opportunities for land use nature-based solutions?

Land – use Nbs

Agroforestry

The cultivation and use of trees and shrubs with crops and livestock in agricultural systems.



Assisted Natural Regeneration

Low-cost forest restoration technique to convert and restore degraded lands into productive forests.

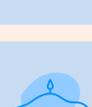


Conservation Agriculture

A farming system that promotes minimum soil disturbance, maintenance of a permanent soil cover, and diversification of plant species.



Natural and Organic Amendments



Conservation Measures

The protection, management, and maintenance of ecosystems within or outside of their natural conditions to safeguard their natural environments for long-term permanence.

Integrated Landscape Management (ILM)

A landscape approach which requires collaboration among different groups of land managers and stakeholders to achieve multiple objectives such as agriculture production, water flow, climate mitigation and adaptation, biodiversity protection, etc.

Practices

Alley cropping: Crops are grown between hedgerows of trees planted at wide spacings.

Forest farming: Forest areas are used for production or harvest of naturally standing specialty crops for medicinal, ornamental, or culinary uses.

Silvo-pasture: Combines forestry and grazing of domesticated animals on pastures, rangelands, or on-farm.

Preventing ecological disturbance by clearing forest floor to avoid potential forest fires, removing weeds or invasive species, enrichment planting, woody plant regeneration, and attracting seed-dispersing agents.

Zero tillage: Process of sowing the crop directly into soil, without tilling after the harvest of the previous crop.

Cover cropping: Planted to cover the soil rather than for the purpose of being harvested.

Crop rotation: Involves growing a planned sequence of different crops on the same piece of land for a variety of conservation purposes.

Organic matter amendments using manure, biosolids, green manure, compost, etc. and natural enrichment using biochar, vermiculite, etc.

These include maintenance of biodiversity hotspots, riparian zones, high carbon forest areas, and peatlands and slopes.

Several practices are incorporated under the ambit of ILM such as forest landscape restoration and agroecological intensification, agri-scapes, etc.

Co-benefits:

- Soil conservation
- Regulate water level
- Sequester carbon
- Create jobs
- Prevent biodiversity loss

Compiled from FAO, WRI, IUCN^[15-19]

Call to action

Mobilising finance - An enabling policy framework exists

1

World leaders from 141 countries, representing 90% of the world's forests, have endorsed the Glasgow Leaders' Declaration on Forests and Land Use at CoP26. This declaration emphasises the critical and interdependent roles of forests, biodiversity, and sustainable land-use in enabling the world to meet its climate and Sustainable Development Goals.

2

12 countries have pledged to publicly finance \$12 billion between 2021-2025, with an additional \$7 billion from the private sector. CEOs from more than 30 financial institutions with over \$8.7 trillion of global assets have committed to eliminate investment in activities linked to agricultural commodity-driven deforestation.

3

These are crucial developments in the UN Decade on Ecosystem Restoration – the strategy for this decade views finance as an important lever for scaling up Nbs.^[20]

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