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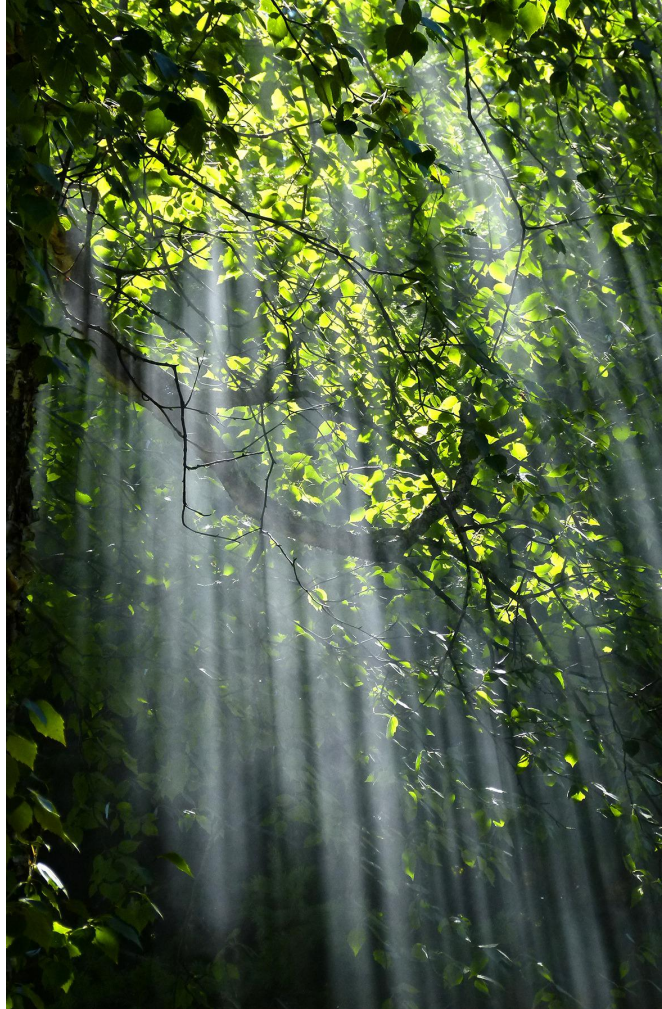
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# Nature-based Solutions to Climate Change



Caption





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# Nature-based solutions to climate change

## Solutions to societal challenges

Nature-based solutions use ecosystems and the services they provide to address societal challenges in sustainable ways, including mitigating and adapting to climate change.

At the same time, nature-based solutions can bring about multiple economic, environmental, and social benefits, such as reduced infrastructure costs, job creation and green growth, and health and recreational opportunities.





# Nature-based solutions to climate change

## Ecosystem-based Mitigation

Climate change mitigation actions not only include reducing greenhouse gas emissions from the energy sector through renewable energy policies or encouraging energy-efficient practices but also include biological mitigation of greenhouse gases, which can occur through conservation of existing carbon pools and sequestration by increasing the size of the carbon pools. Carbon sequestration is defined as the removal of carbon dioxide from the atmosphere by soils and plants – both on land and in aquatic environments such as wetlands – and/or the prevention of carbon dioxide emissions from terrestrial ecosystems into the atmosphere.

In the context of climate change mitigation, nature-based solutions are referred to as ecosystem-based mitigation (EbM), which encompasses a diverse set of mitigation approaches including the sustainable management of forests, use of native assemblages of forest species in reforestation activities, conservation and restoration of peatlands and wetlands, protection of the ocean sink, improved grassland management, and environmentally-sound agricultural practices.



Examples of EbM include the following:

- *Afforestation, reforestation, and forest restoration:* Increasing forest area and density through afforestation, reforestation, and forest restoration results in increased absorption of carbon dioxide from the atmosphere.
- *Protecting and restoring mangroves:* Mangroves are among the most effective ecosystems on Earth for carbon capture and storage. It is estimated that mangrove soils hold over six billion tonnes of carbon and can sequester up to three to four times more carbon than their terrestrial counterparts.
- *Seagrass conservation and restoration:* Seagrass meadows are recognised as one of the most productive ecosystems in the coastal zone. One of the many ecosystem services they provide is carbon sequestration and storage. One square metre of seagrass can generate 10 litres of oxygen per day through photosynthesis.

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## Ecosystem-based Adaptation

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