

Nature-based Solutions in the NDCs: A synthesis and recommendations for enhancing ambition and action by 2020



UNIVERSITY OF
OXFORD

Professor Nathalie Seddon

Nature-based Solutions Initiative

University of Oxford, UK

in collaboration with IUCN

What are Nature-based Solutions (NbS)?



=> Reframing nature's relationship with climate change: *biodiversity is our closest ally in the fight against climate change (not simply a vulnerability)*

Role of nature in climate change mitigation

- **12% global CO₂ emissions** in 2007-2016 came from land use change; over same period **land carbon sink stored 28%**
- Restoring / protecting natural ecosystems secures these carbon stocks - *grasslands, forests, wetlands, coastal habitats (mangroves), peatlands and agricultural lands* - incl. soils
- Growing scientific consensus - globally NbS could reduce net emissions and provide **30-40% CO₂ mitigation needed by 2030** for a *>66% chance of keeping warming to <2 °C*

Role of nature in climate change adaptation



Approach	Effects
Protecting or restoring natural vegetation in catchment areas (e.g., in headwaters and along rivers)	<ul style="list-style-type: none">• <i>Secures and regulates water supplies</i>• <i>Protects communities from flooding, soil erosion and landslides</i>• <i>Enhances water quality</i>
Restoring coastal ecosystems (for example, mangroves, reefs and salt marshes)	<ul style="list-style-type: none">• <i>Protects communities from storm surges, salt water intrusion and erosion</i>
Planting trees among crops or crops within forest (i.e. agroforestry)	<ul style="list-style-type: none">• <i>Maintains and/or enhances yields in drier, more variable climates</i>



It increasingly makes economic sense to invest in NbS

- Growing # studies revealing nature's benefits in terms of avoided damages:
 - e.g. annual cost from flooding would double and costs from storms would triple in absence of reefs globally
 - e.g. 24 billion US\$ per year of avoided hurricane damages in the USA thanks to coastal wetlands (vital if 1/100 year hurricanes => 1/5)

What does the Paris Agreement say about nature?

- Calls on all Parties to acknowledge “the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity, recognized by some cultures as Mother Earth”, and includes references to natural ecosystems (especially forests) in several of its articles
- How have nations responded?



How prominent are NbS in the NDCs?



- 167 NDCs, 197 nations
- 10 comparative studies of NbS in the NDCs
- Vary in methods, sample size, regional focus
- Range of statistics confusing to policy makers
- Conducted a meta-analysis

Common findings

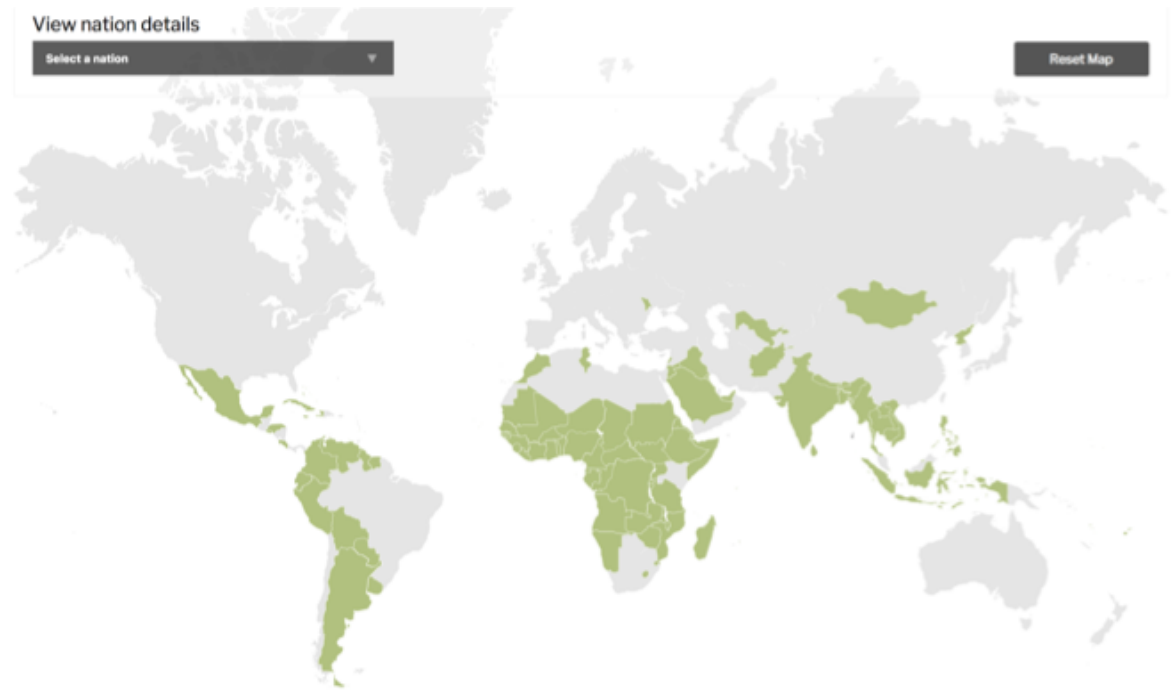
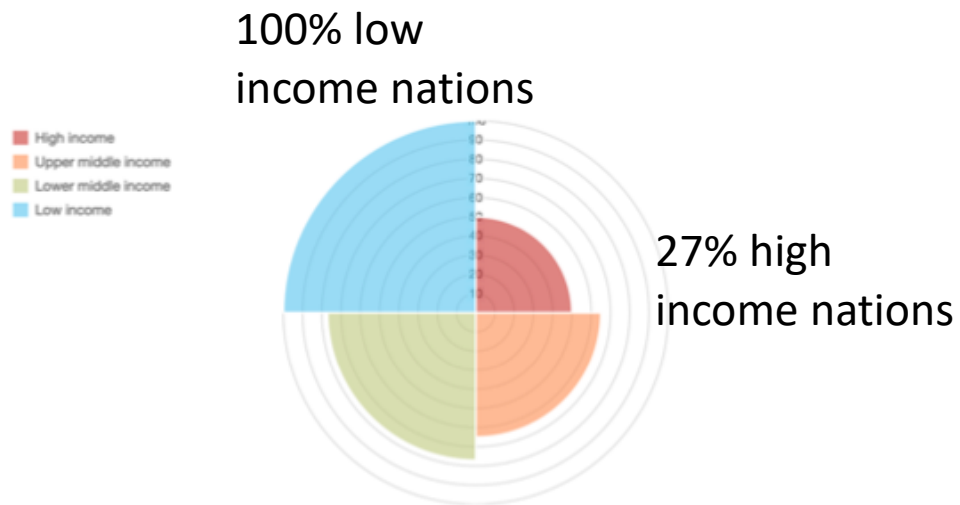
Prominence

- #1: *Ecosystems are important but severely impacted by climate change*
- #2: *Action is needed to address climate change impacts ecosystems*
- #3: *NbS included as mitigation and/or adaptation tools in most NDCs*

Challenges

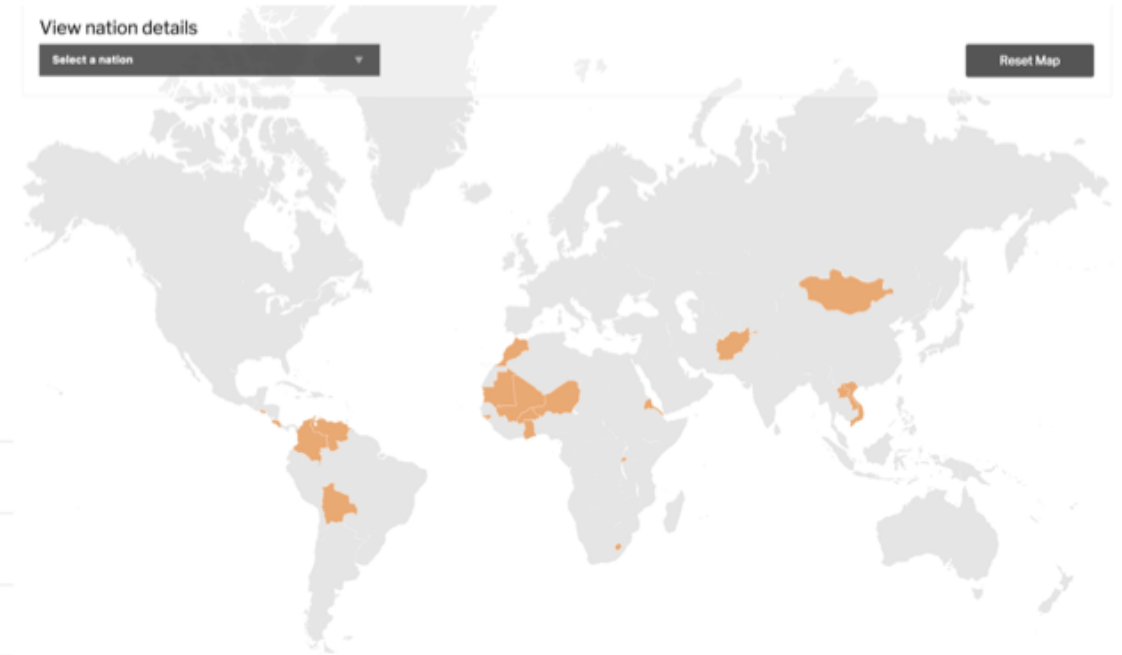
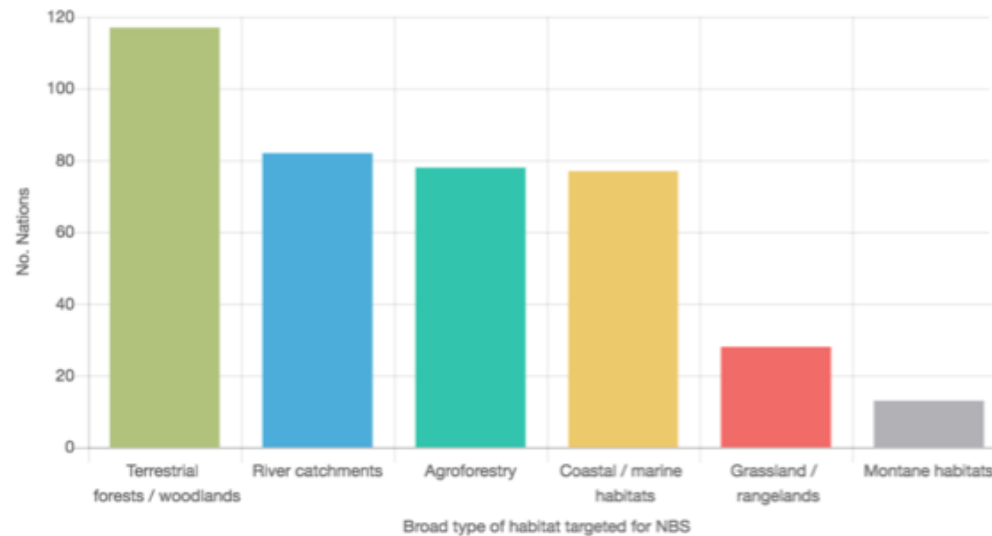
- #4: *Developing nations lead the way*
- #5: *Strong emphasis on forests; other ecosystems rarely included*
- #6: *Little evidence of synergy between mitigation & adaptation*
- #7: *Lack of informed targets*

66% Paris Agreement signatories include NbS in their NDCs (130 nations: 103 as adaptation tool, + extra 27 as a mitigation tool)



High level intentions for nature not met by robust targets

- Many ecosystems poorly represented
- Emphasis on afforestation or reforestation
- Targets don't take resilience (or stewardship) into account (area not quality of habitat)



<7% NDCs have “measurable” NbS targets for adaptation

Policy Pointers

- **#1: Build on global recognition of ecosystems' importance** in delivering *both* climate change mitigation and adaptation goals, and **fully integrate NbS into the 2020 NDCs**. (High income nations would benefit from following developing nations in embracing NbS)
- **#2: Introduce a more structured approach** to enable comparison and facilitate the tracking of ambition for nature, including measurable targets in national plans *drawn on best available scientific evidence, local knowledge and good practice*.

Policy Pointers

- **#3: Consider *all* natural ecosystems within a country** as important for climate change mitigation and adaptation, in particular carbon-rich ecosystems such as coastal habitats (e.g. mangroves) and wetland habitats (e.g. peatlands)
- **#4: Engage with researchers**, local communities and indigenous peoples to **co-develop locally relevant and measurable targets** and costed plans for mitigation *and* adaptation
- **#5: Report on progress** towards targets in the NDCs, NAPs and other climate policy processes beyond UNFCCC, with common indicators for reporting

New science-into-policy platform to support this process



How effective are NbS?

An interactive evidence map linking nature-based solutions to adaptation outcomes based on a systematic review of the peer-reviewed literature.

TO BE LAUNCHED

2019



+ look out for our report