

Overview on the developments of Ecosystem-based Adaptation in the context of the CBD and UNFCCC



Stockholm Resilience Centre
Sustainability Science for Biosphere Stewardship



**Stockholm
University**

SwedBio
A programme at Stockholm Resilience Centre

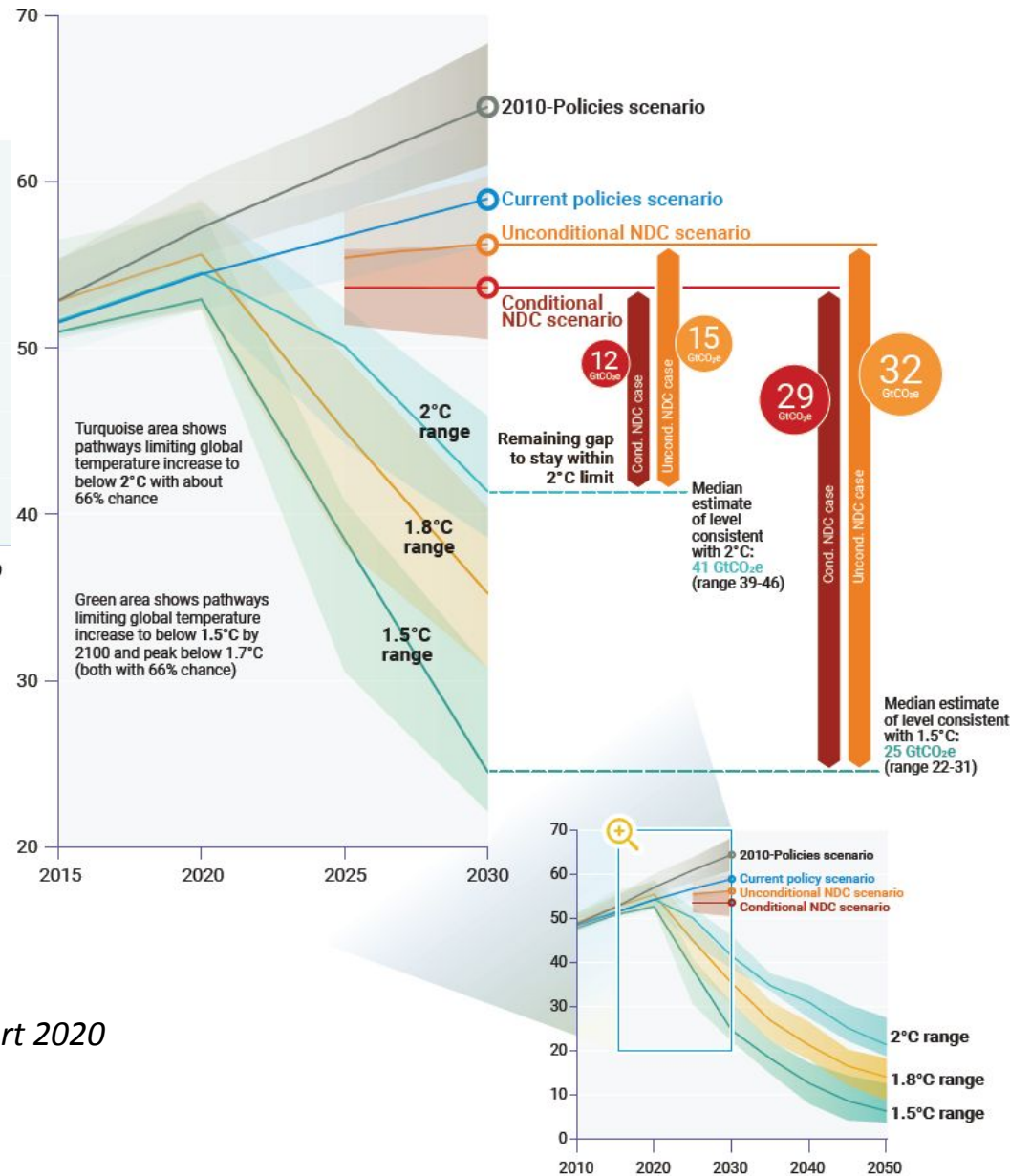
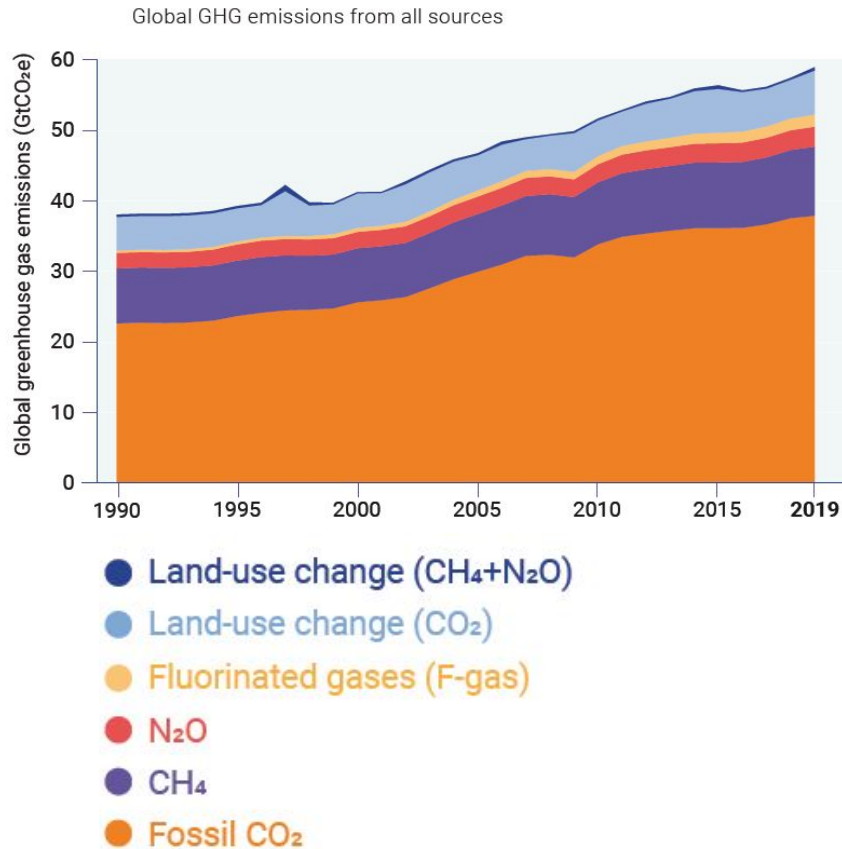
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At Stockholm Resilience Centre

A knowledge interface
contributing to poverty alleviation,
sustainable livelihoods, equity and
human wellbeing through
development towards resilient
ecosystems and societies

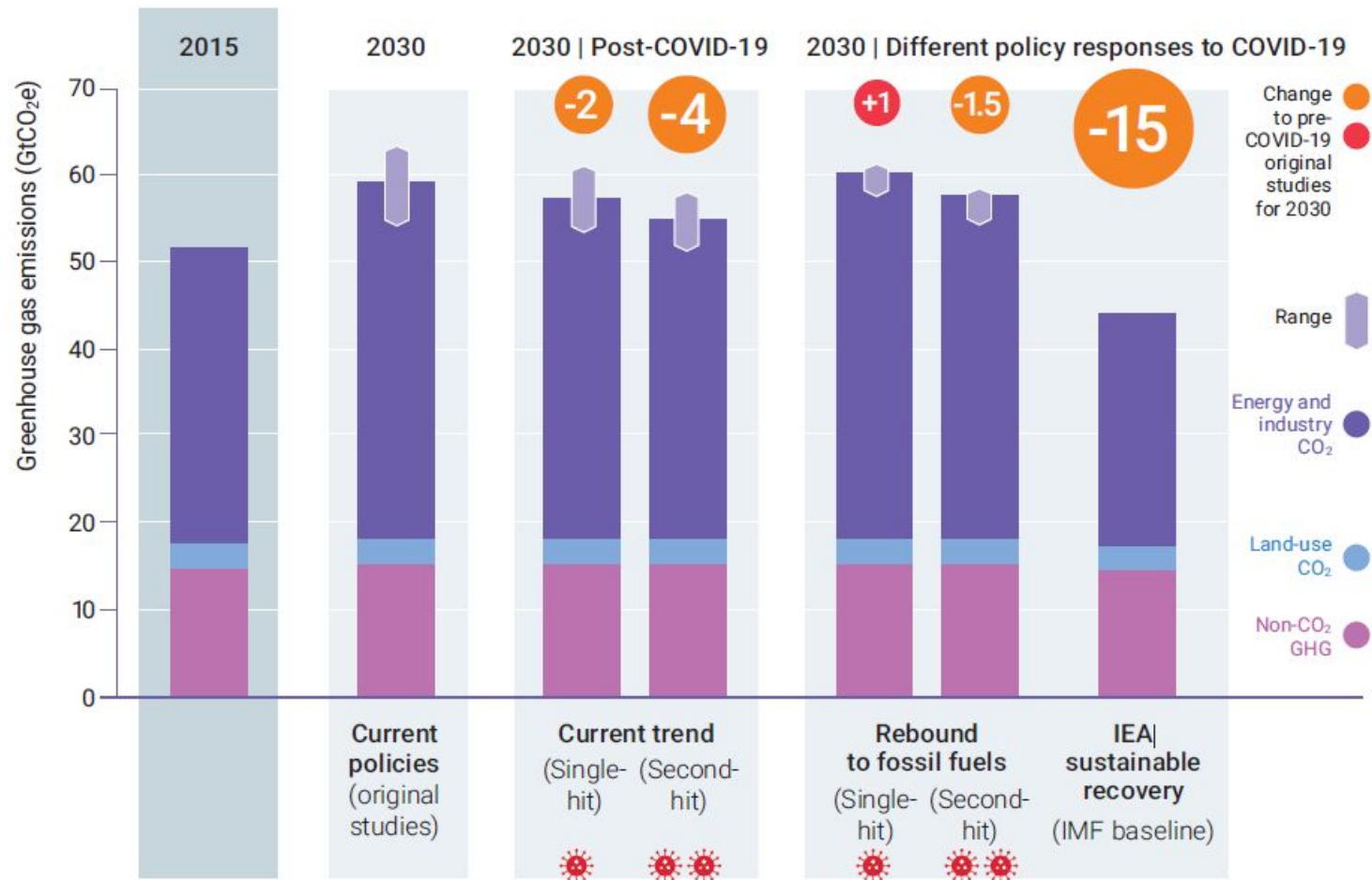


Climate trends



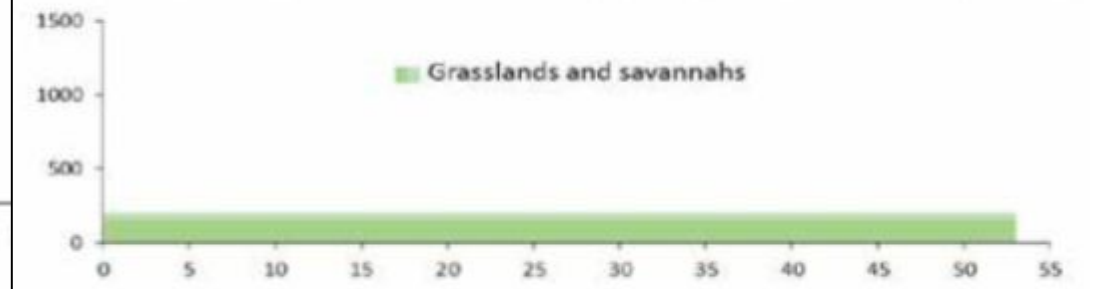
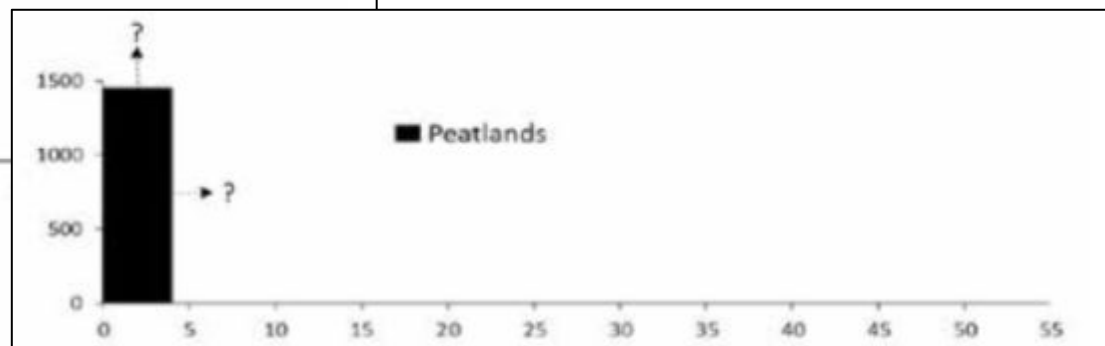
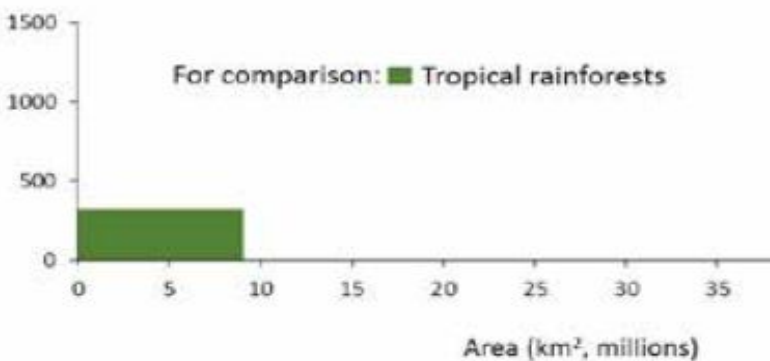
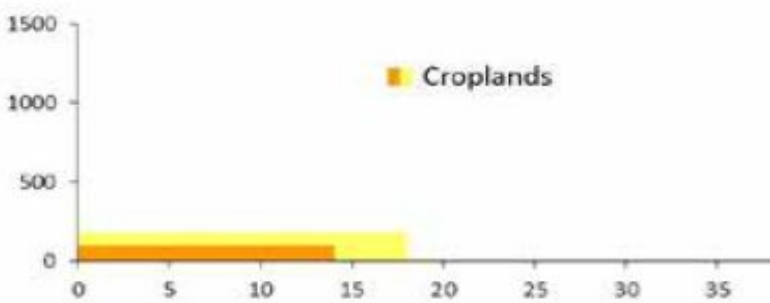
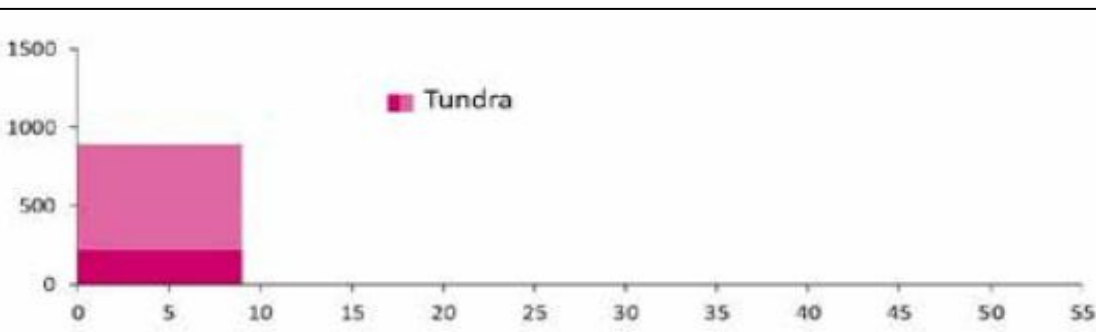
UNEP. 2020. *The Emissions Gap Report 2020*

Climate trends



UNEP. 2020. *The Emissions Gap Report 2020*

Average organic carbon stocks per hectare



Nature-based Solutions

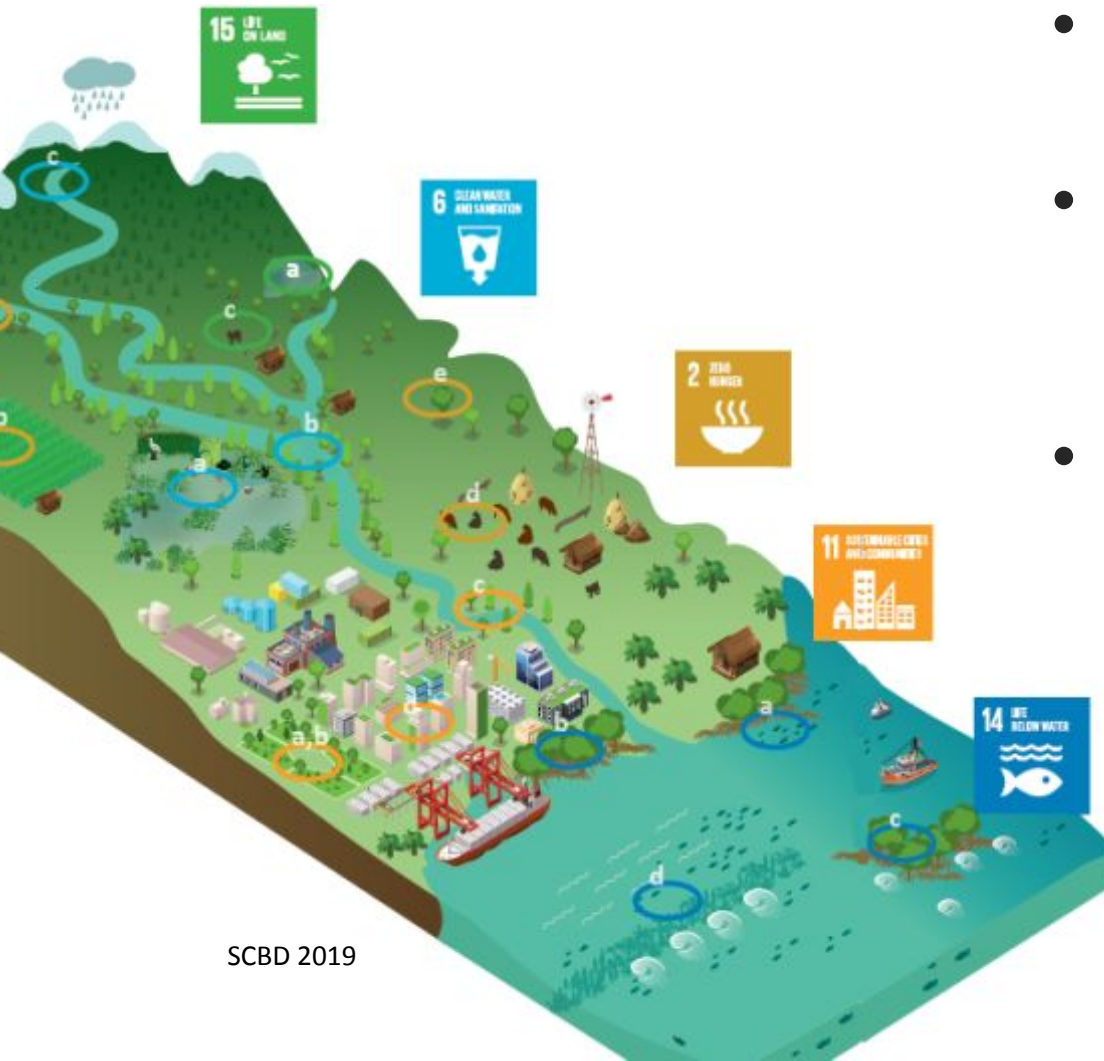
Nature-based Solutions (NbS) are defined as “actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits”

(IUCN 2016)



IUCN 2020

The role of synonyms

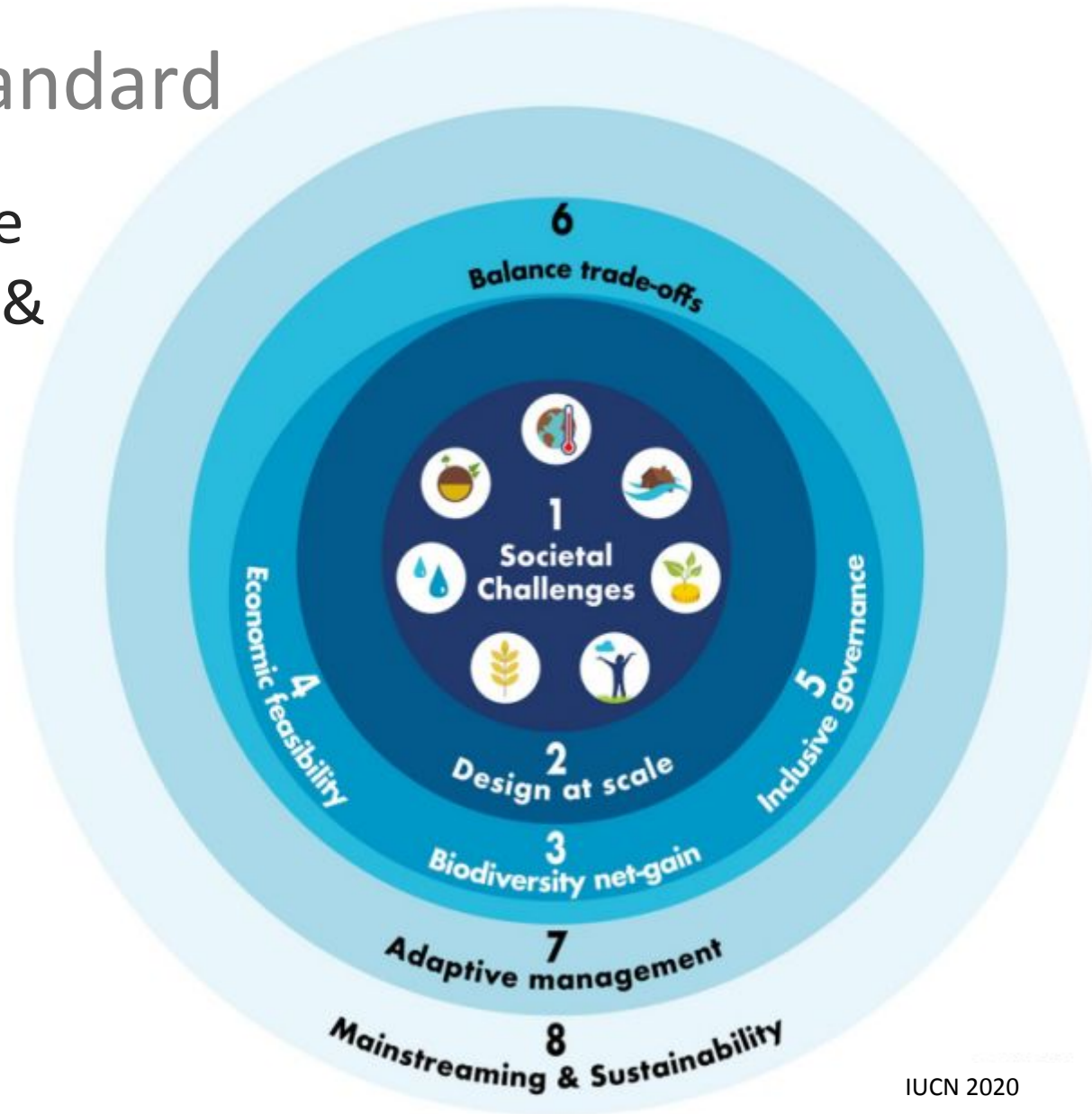


SCBD 2019

- NbS v NCS v EbAp
- Increasing use of 'NbS' for climate change
- Rising voices against the use of some terms, e.g. NbS
- Seen as northern, protectionist, losing rights including access, greenwashing, hidden agendas

NbS Global Standard

- A framework for the design, verification & scaling up of NbS
- Consistent criteria & indicators
- Supported by the Principles for NbS

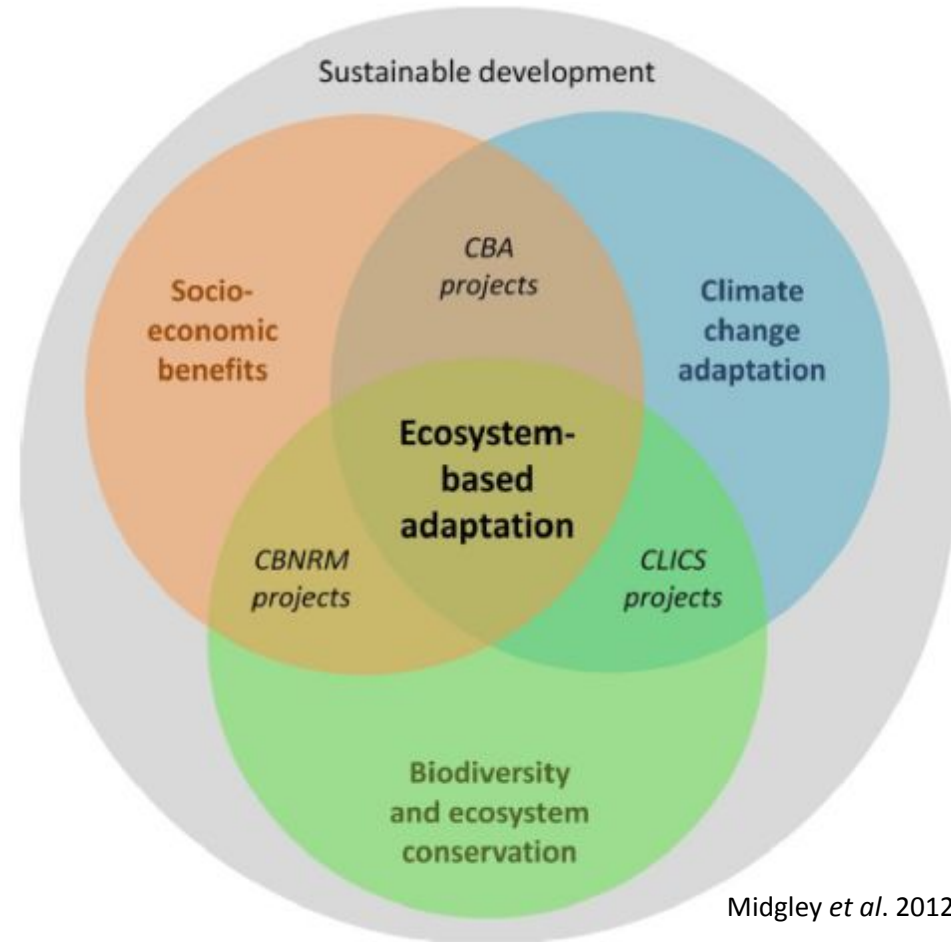


Ecosystem-based adaptation

“Ecosystem-based adaptation (EbA) is the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change.

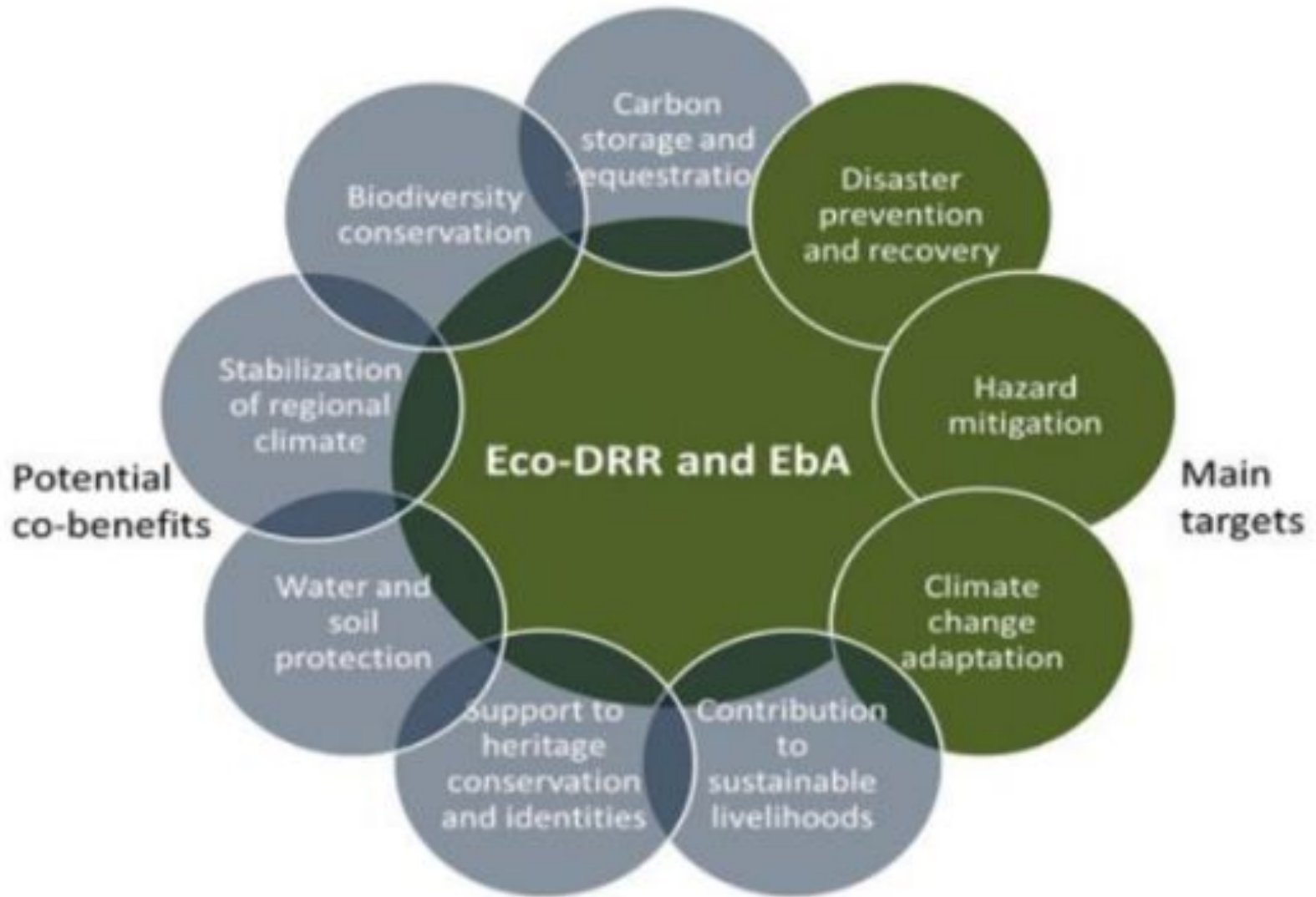
EbA aims to maintain and increase the resilience and reduce the vulnerability of ecosystems and people in the face of the adverse effects of climate change”

SCBD 2009



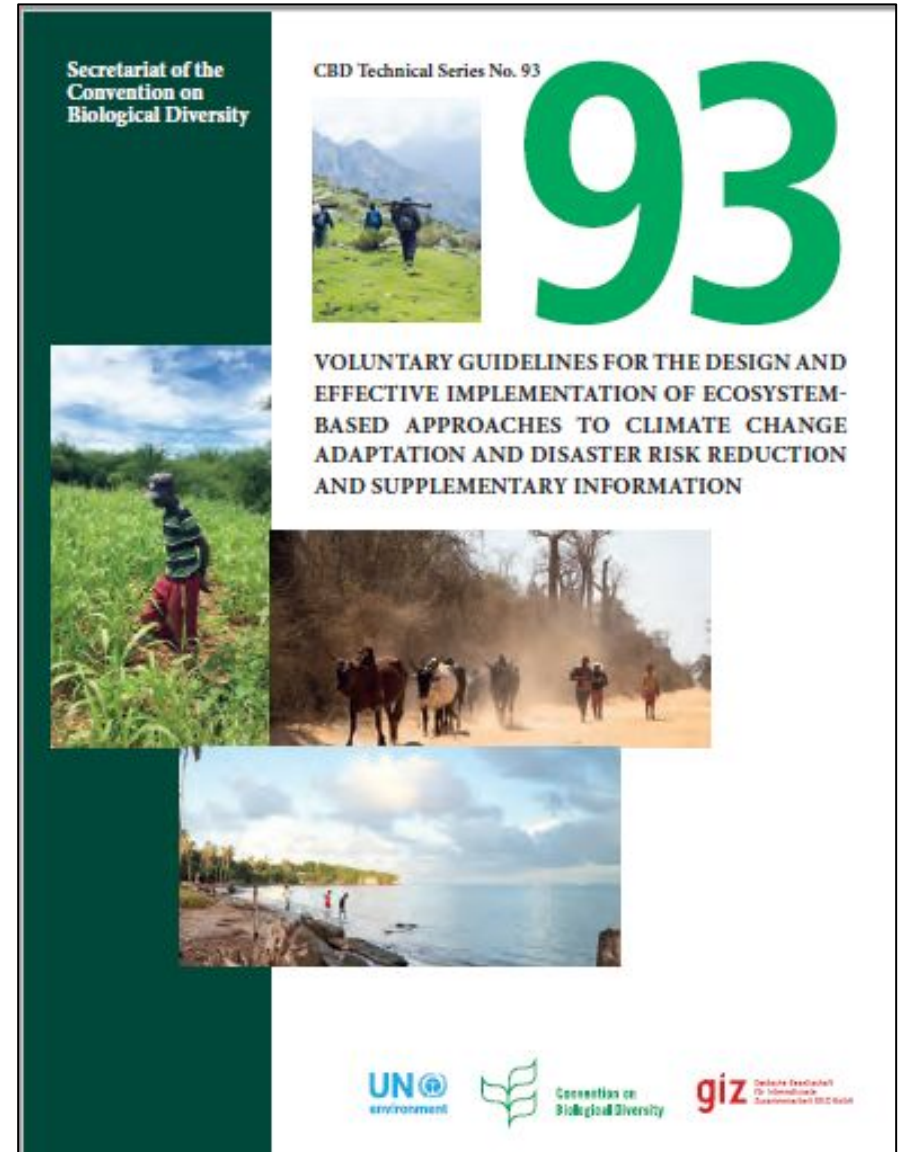
Midgley *et al.* 2012

Multiple benefits



CBD & EbA

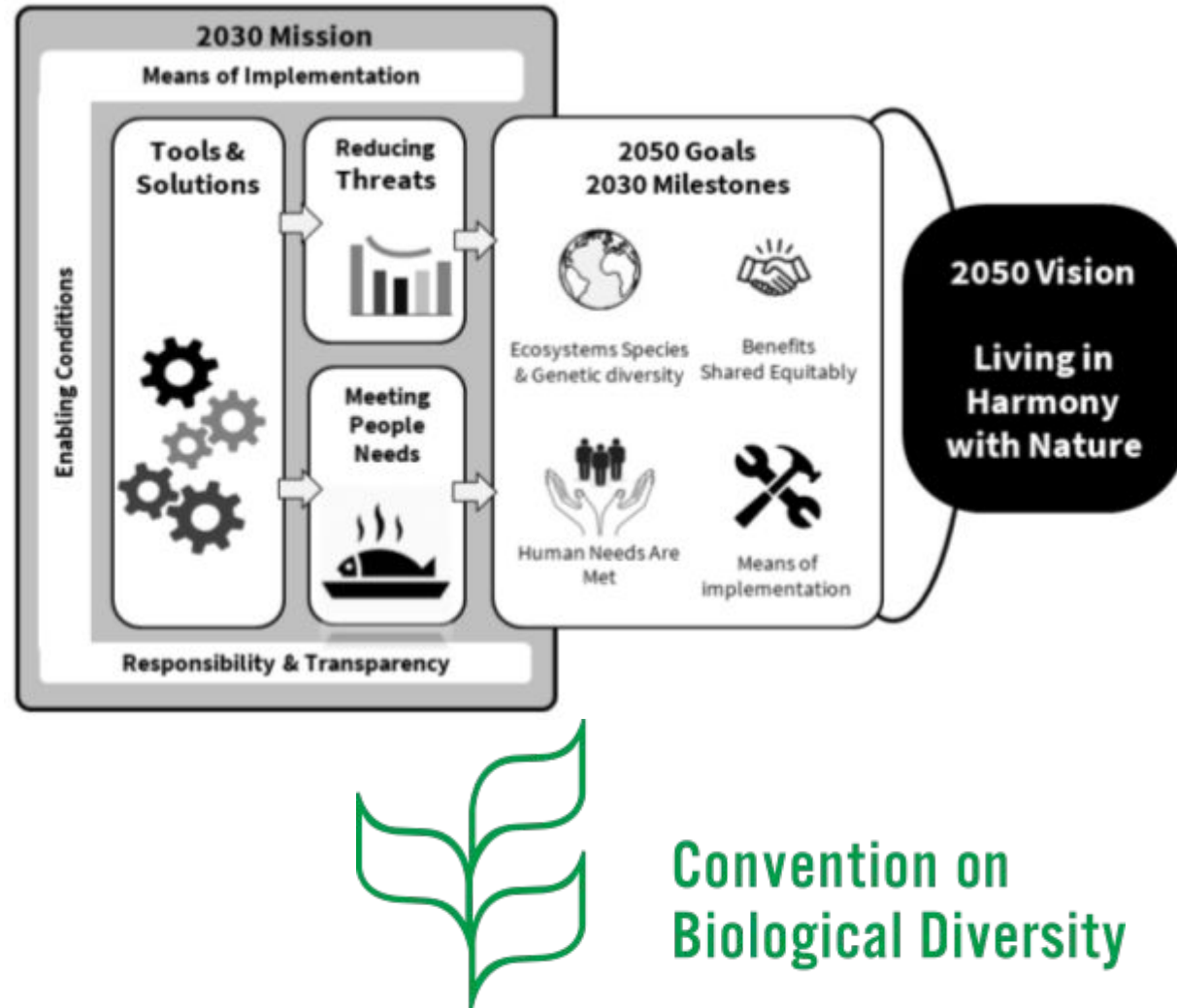
- Slow action on role of EbA etc., despite early recognition
- First CC as threat to biodiversity, then mitigation, then adaptation
- Concerns over CBD v UNFCCC mandate and precedent
- COP14 (2018) adopted voluntary guidelines, links to NBSAPs & NDCs, “*encourages*” policy coherence at all levels, and requested more research



Post-2020 Global Biodiversity Framework

(a) Reducing threats to biodiversity

- Target 7. By 2030, increase contributions to climate change mitigation, adaption and disaster risk reduction from **nature-based solutions** and **ecosystems based approaches**, ensuring resilience and minimizing any negative impacts on biodiversity.



UNFCCC & EbA

- Nairobi Work Plan (NWP), since COP11 (2005), aims to assist Parties to understand and improve their adaptive capacity
- NWP themes include specific ecosystems, gender, ITK, socio-economic dimensions, etc.
- Paris Agreement (2015) refers to the role of ecosystem integrity, especially in adaptation and resilience, and link to sustainable development
- Nationally Determined Contributions (NDCs) should have increasing ambition for both mitigation & adaptation

Nations Unies

Conférence sur les Changements Climatiques 2015

COP21/CMP11

Paris France



Village without adaptation

- ✗ Most vulnerable to climate change impacts
- ✗ No management of ecosystem services

Village with hard engineering adaptation options

- ✓ Effective in reducing potential damage
- ✗ No management of ecosystem services

Village with ecosystem based adaptation (EbA)

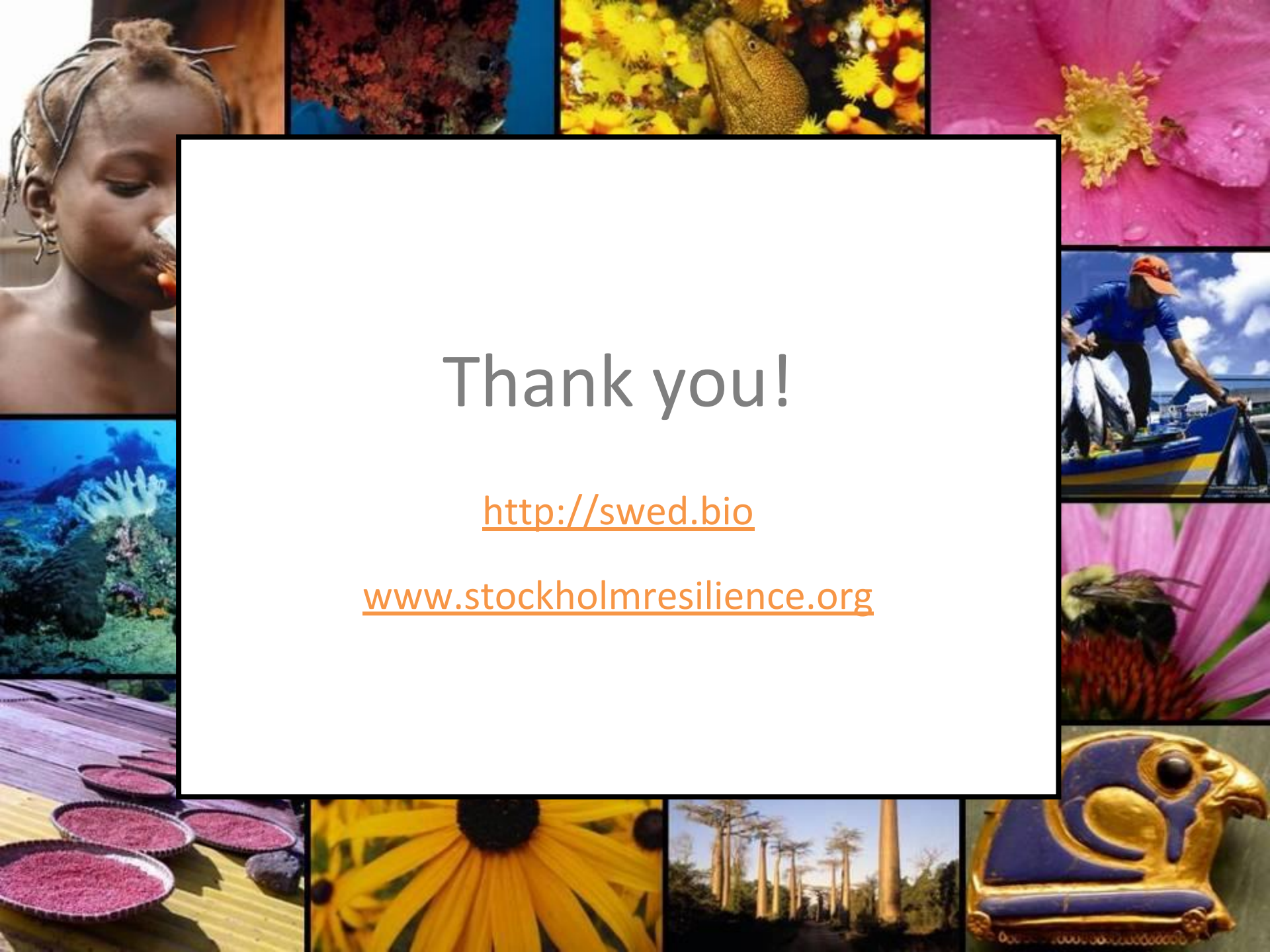
- ✓ Natural buffers reduce climate change impacts
- ✓ With secondary benefits from ecosystem services



UPSLOPE	Deforestation: <ul style="list-style-type: none"> - causes greater landslide risk & higher flood levels - results in biodiversity loss
RIVERSIDE	Removal of riverside vegetation: <ul style="list-style-type: none"> - causes reduced freshwater quality - increases flooding risk
COASTAL	Removal of coastal vegetation & mangroves: <ul style="list-style-type: none"> - causes erosion & coastal flooding - degrades fish & crustacean habitat
MARINE	Inappropriate watershed management: <ul style="list-style-type: none"> - reduces water quality - degrades health of fisheries and reefs

Improved drainage: <ul style="list-style-type: none"> - reduces landslide risk & groundwater recharge - but can increase sediment flows to rivers and reefs
Artificial banks, dredging & river realignment: <ul style="list-style-type: none"> - reduces flooding risk - but can cause poor freshwater quality & loss of biodiversity
Seawalls: <ul style="list-style-type: none"> - reduce erosion in targeted areas - but can cause erosion nearby & reduce fish & crustacean habitat - heavy building material can be projected inland by tsunamis & storm surges
Increased aquaculture & access to fisheries technology: <ul style="list-style-type: none"> - supplements declining fisheries

Intact & replanted forests: <ul style="list-style-type: none"> - reduce landslide risk & less sediment flow to rivers & reefs - provide building material, crops & firewood & store carbon
Intact & replanted riverside vegetation: <ul style="list-style-type: none"> - reduces sediment flows & flooding risk - protects freshwater supply & biodiversity
Intact & replanted coastal vegetation & mangroves: <ul style="list-style-type: none"> - reduce coastal erosion & flooding - provide building material, crops, firewood & store carbon
Integrated ridge to reef management: <ul style="list-style-type: none"> - protects intact habitats & biodiversity - supports healthy fisheries & reefs



Thank you!

<http://swed.bio>

www.stockholmresilience.org