Challenges for REDD+:

Co-benefits and Biodiversity Safeguards

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What are co-benefits and safeguards?

• REDD is about storing carbon - anything else that is derived from a REDD project is a '**co-benefit**'

- e.g., clean water, bushmeat, biodiversity, etc.

• this language is unfortunate because it implies the need to modify a REDD project to achieve co-benefits

• **safeguards** are built-in assurances that certain forest social and environmental values will be protected

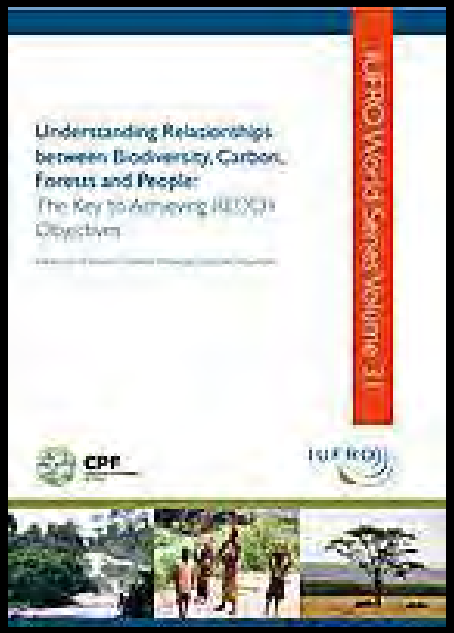
Convention on Biological Diversity – REDD safeguards Decision

Adopted as Decision XI/19:

• compile information on biodiversity safeguards

• work with IUFRO Global Expert Panel on climate change and biodiversity :

- Publication: "*Understanding Relationships between Biodiversity, Carbon, Forests, and People: the key to achieving REDD+ objectives*" (IUFRO World Series Vol. 31)



• build synergy between biodiversity action plans and climate action plans

• guidance to Parties: stakeholder involvement, multiple benefits, ecosystem management, limit degradation, use native trees, consider all carbon pools, use traditional knowledge, etc.

Environmental safeguards

1. Overall: No leakage and must be additional

2. Actions should be consistent with conservation of natural forests and biodiversity

- consistent with CBD ‘Programme of Work on Forest Biodiversity’ and national forest planning
- protection and conservation of primary forests
- enhance other environmental services
- no forest conversion

3. Avoid adverse impacts on non-forest ecosystems and their services

- no afforestation in grasslands or savannahs

Why are REDD environmental safeguards important?

- we obtain many benefits from forests, not just carbon
- need to comply with national biodiversity plans and environmental laws
- projects need to be science based – i.e., need to understand ecosystem science
- e.g., understand that biodiversity supports many ecosystem services, including carbon

Why do we need biodiversity safeguards?

- most safeguard processes consider biodiversity as a “co-benefit” to carbon in forests
- this view is fundamentally wrong because there is a relationship between biodiversity and carbon in forests
- many other ecosystem services are also supported by biodiversity
- >70% of studies show that more species in the ecosystem leads to higher production

Mechanisms for biodiversity increasing production and carbon storage

- complementarity in resource use
- facilitation (e.g., legumes, symbionts, commensals)
- increased pollination by multiple species
- pest reduction (e.g., birds reduce chronic insect herbivory and increase production by 20% in montane pines in US)
- disease reduction (e.g., roots touching in single species plantations facilitates disease)
- increased soil productivity (litter decomposition)
- ecosystem resilience

Biodiversity is key to many ecosystem services

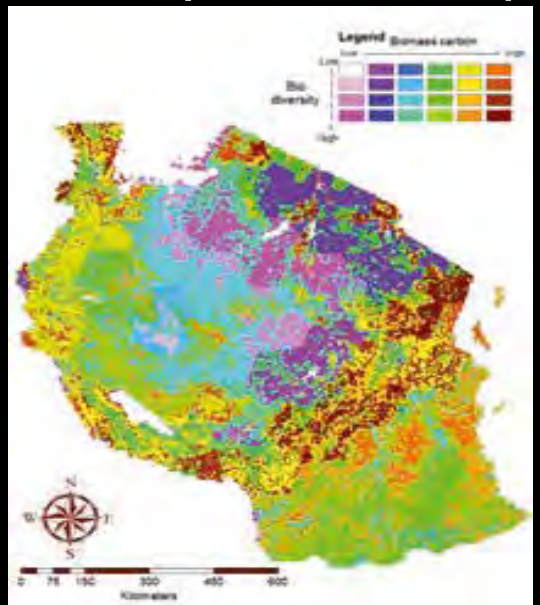
Ecosystem service	Strength of linkage to biodiversity	Quality of evidence
Pollination	High	High
Decomposition	High	High
Carbon sequestration	High	High
Carbon storage	Mixed	High
Erosion control	Low	High
Pest control	High	High
Seed dispersal	High to none (wind)	High
Water quality	Low	Poor
Water quantity	Medium to high	Poor

So, we could grow **trees** and store carbon….

Or, we could foster and maintain **forest ecosystems** with multiple ecosystem services….and store even **more** carbon

How should we implement biodiversity safeguards?

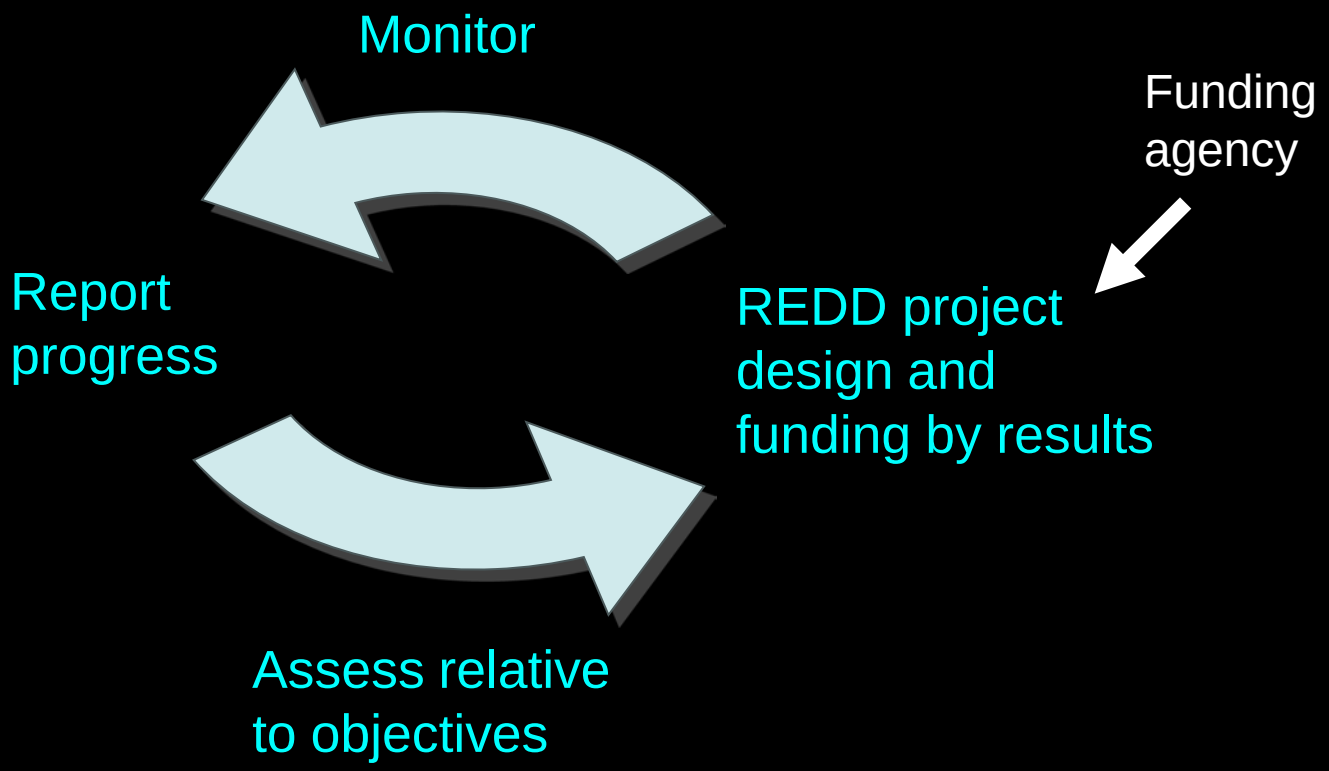
- need landscape approach with national-level data on forest types and species distributions – high biodiversity areas
- maintaining primary forests first
- sustainable management second, and reforest third
- establish best indicators with set objectives (e.g., area of each ecosystem type, functional species, etc.) for monitoring



Composite map of carbon and species richness in Tanzania

MRV – Monitoring, Reporting, and Verification

- need effective information systems (including indicators)
- assess progress relative to *objectives* which are the *safeguards*



Value of safeguards with MRV

- enables a results-based incremental funding scheme
- protect local cultures and national interests
- promotes sustainable development
- promotes science-based policy for forest recovery
- promotes consideration of more than just carbon

Conclusions and why we need biodiversity safeguards

- biodiversity provides many ecosystem services and is directly related to carbon sequestration
- biodiversity is directly related to ecosystem resilience
- therefore: REDD projects in degraded forests or deforested areas should work towards fully functioning forest ecosystems to
    - 1. maximise carbon storage over time, and
    - 2. provide a suite of other services to benefit local communities

End