

Integrated Policy Management for Co-benefits: Climate, biodiversity, and human livelihoods

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Outline

- Introduction – Setting the scene
- The context
- The challenges
 - Mitigation
 - Adaptation
- Human livelihoods means.....
- Conclusions

Indicative research priority

Ecosystem type	Climate regulation role	Biodiversity value	Benefits for human well-being	Mitigation potential	Adaptation potential	Co-benefits
Peatland/wetland	Carbon sink, water cycling	High	Medium	High	High	High
Tropical forest	Carbon sink, water cycling, albedo	Very high	High	High	High	Very high
Arable farmland	Carbon source	Low	High	Medium	High	Medium
Oceans	Carbon sink, water cycling, albedo,	High	High	Low	Low/medium	Medium
Coral reefs	Carbon cycle	Very high	High	Low	High	High

Political context

- Adaptation – to reduce impacts
 - Buenos Aires Plan of Action
 - New Delhi National Adaptation Plan of Action
 - Nairobi Program of Work on Impacts, V&A
 - To date, no real adaptation scheme
- Mitigation – to reduce the source/enhance the sinks
 - Marrakesh Accord – A/R CDM
 - RED – ca. 20% of the global GHG emissions

Economic context: Stern Review



- Mitigation of land-based emissions much cheaper than mitigation of other types of emissions
- The opportunity cost of forest protection could be around \$5 B/y
- The opportunity cost of farming and proceeds from the sale of timber, are equivalent to $< \$1/\text{tCO}_2$, and usually well below $\$5/\text{tCO}_2$.
- Other estimates suggest that costs would rise as the portion of deforestation to be avoided rose – to $\$30/\text{tCO}_2$
- It does not mean simple and straightforward

Mitigation challenges: REDD

- Appropriate baseline
 - National or sub-national?
 - Is it fair across countries or across regions within a country?
- Monitoring and measurement issues
 - Capacity, accountability?
 - Reduced transaction costs?
- Equity across stakeholders – beyond carbon
 - Linked to PES/co-benefits?
 - Improve livelihoods of the rural poor?
- Political commitments

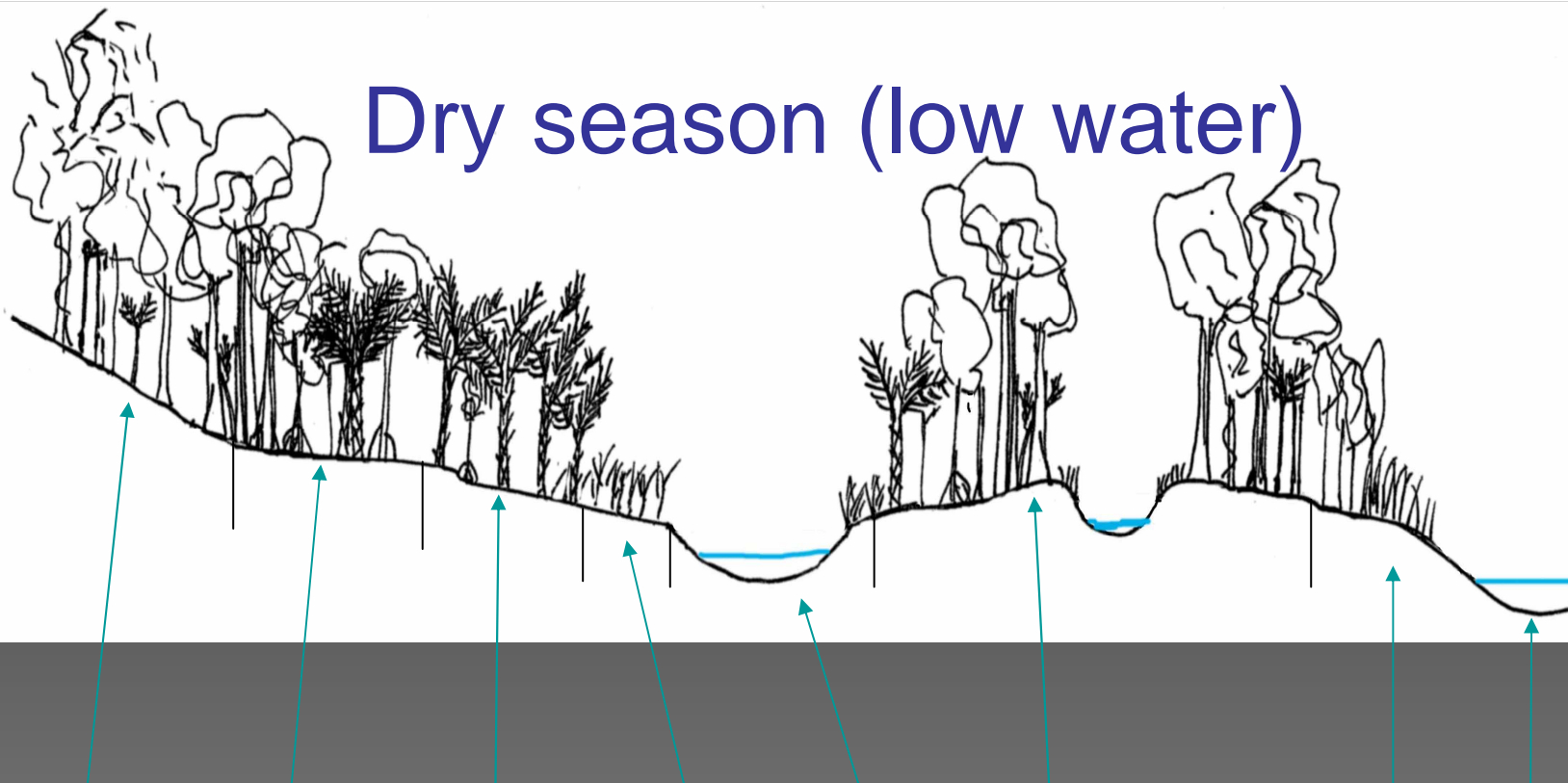
It goes beyond maintaining C-stocks



Adaptation challenges: The rural poor

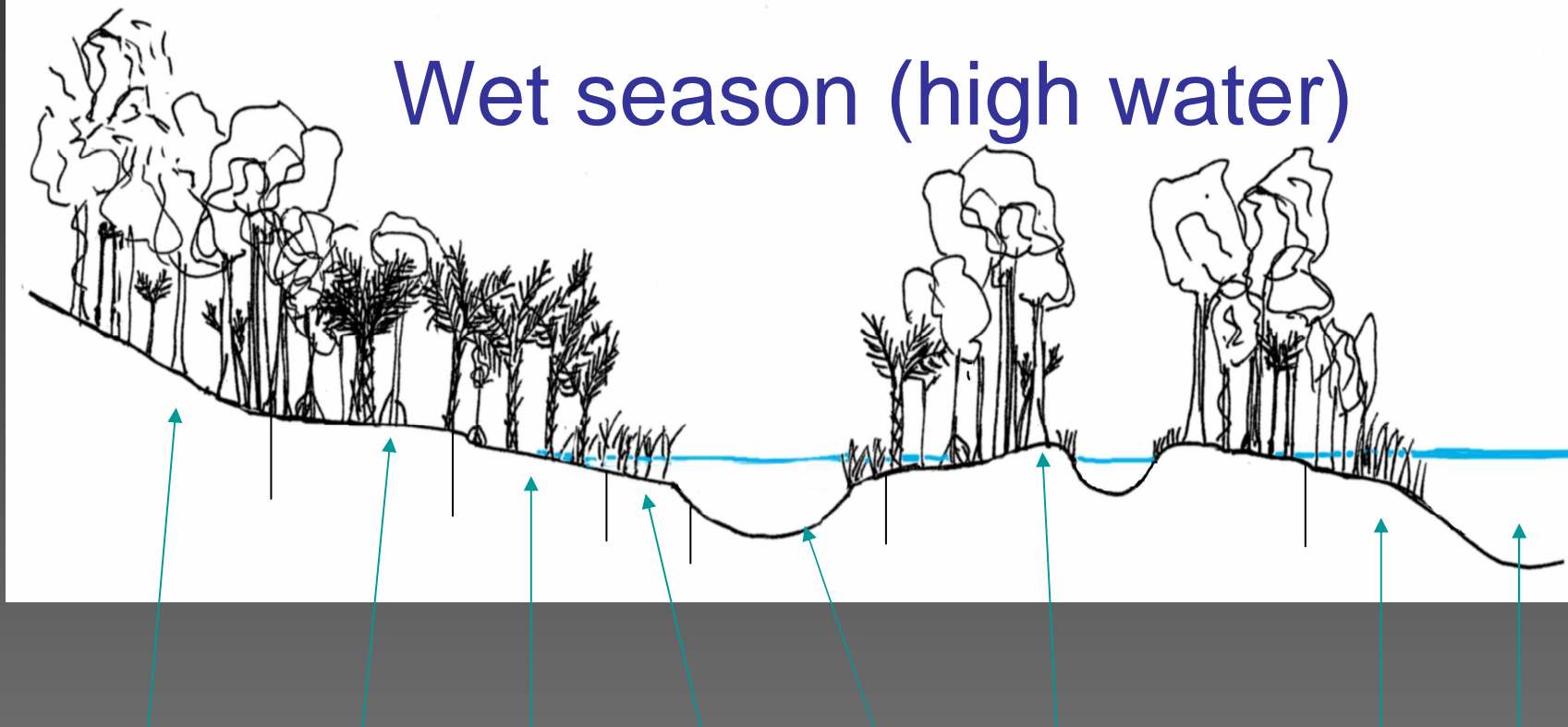


Dry season (low water)



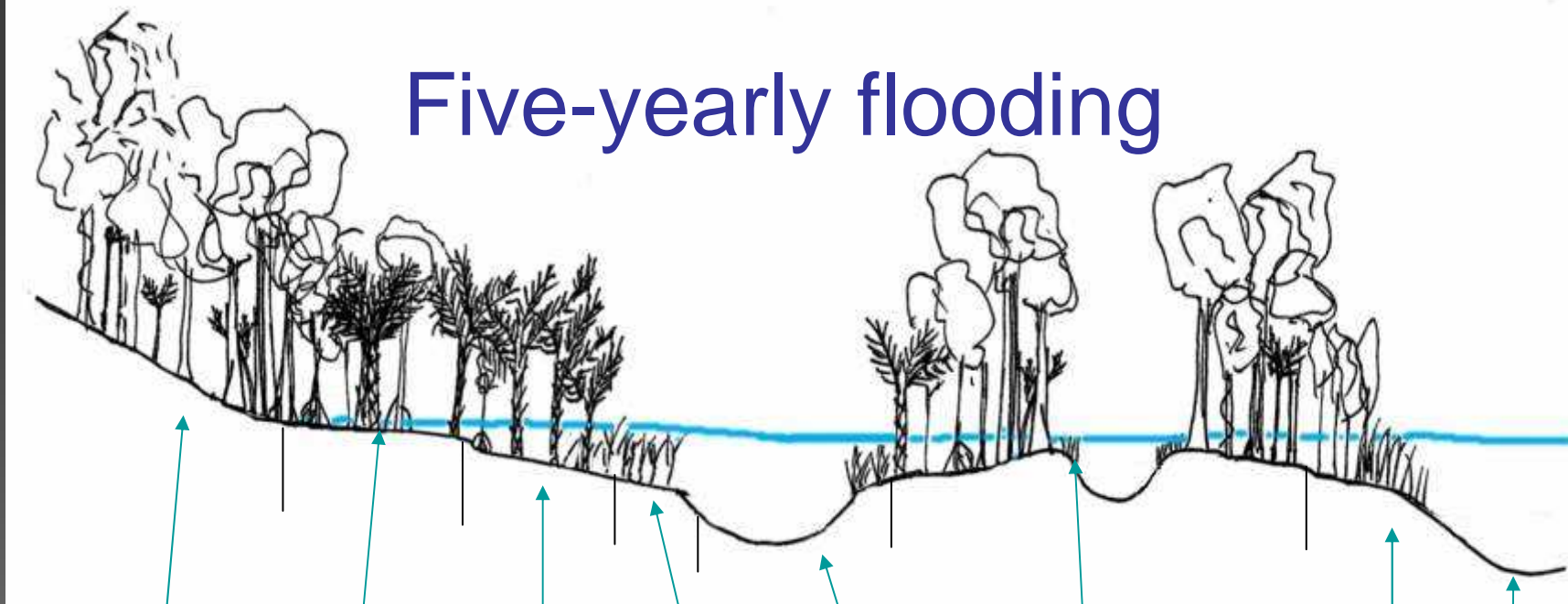
Habitat	Lowland rainforest	Alluvial Swamp Forest	Sago Swamp	Swamp Scrub	Lake Formations	Alluvial Swamp Forest along Smaller rivers	Pioneer Formations	Rivers
Species	Wild pig, Cassoari, G. victoria, Cus-cus,	Crocodile, Wild pig, Cassoari, G. victoria, Cus-cus,	Crocodile, Wild pig, Cassoari, G. victoria, Cus-cus	Crocodile	Crocodile, Fresh water fish species	Crocodile, Wild pig, Cassoari, G. victoria, Cus-cus	Crocodile	Crocodile, Fresh water fish species

Wet season (high water)



Habitat	Lowland rainforest	Alluvial Swamp Forest	Sago Swamp	Swamp Scrub	Lake Formations	Alluvial Swamp Forest along Smaller rivers	Pioneer Formations	Rivers
Species	Wild pig, Cassoari, G. victoria, Cus-cus,	Crocodile, Wild pig, Cassoari G. victoria, Cus-cus,	Crocodile, Wild pig, Cassoari, G. victoria, Cus-cus	Crocodile Fresh water fish species	Crocodile, Fresh Water fish species,	Crocodile, Wild pig, Cassoari , G. victoria, Cus-cus	Crocodile	Crocodile, Fresh Water fish species

Five-yearly flooding



Habitat	Lowland rainforest	Alluvial Swamp Forest	Sago Swamp	Swamp Scrub	Lake Formation	Alluvial Swamp Forest along Smaller rivers	Pioneer Formations	Rivers
Species	Wild pig, Cassoari, G. victoria, Cus-cus	Wild pig, Cassoari, G. victoria, Cus-cus	Crocodile, Wild pig, Cassoari, G. victoria	Crocodile	Crocodile, Fresh water fish species,	Crocodile, Wild pig, Cassoari s, G. victoria, cus-cus	Wild pig, Cassoari, G. victoria, Cus-cus Crocodile, Fresh water fish species	Crocodile, Fresh water fish species

Human livelihoods



- Subsistence farmers
- Hunters and gatherers
- Food security (diversity of sources)



Conclusions

- Ecosystem change (rather than species) will be the immediate effect of climate change on biodiversity
- The rural poor in developing countries are the most vulnerable group and hit harder by climate change
- Strong policy on pro-poor adaptation is needed and should be linked or bundled with mitigation strategies

Thank You

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