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Safeguarding & enhancing the ecosystem co-benefits of REDD+

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27 April 2010

UN-REDD workshop: identifying and promoting ecosystem co-benefits from REDD+

UNEP WCMC

FAO FIAT PANIS

UNDP

UNEP

Aims

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Working Paper: Safeguarding and enhancing the ecosystem co-benefits of REDD+

UN-REDD Programme

1st DRAFT, 21 April 2010

UN-REDD Ecosystem Co-benefits Series 2

UNEP WCMC

Issues paper -

Explore impacts of REDD+ decisions on ecosystem co-benefits

Measures and tools to safeguard and enhance ecosystem co-benefits

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Where, what and how?

Influences on ecosystem co-benefits

- **Where** are REDD+ efforts concentrated?
  - Biodiversity and ecosystem services vary with location
- **What** activities ? (AWG-LCA list)
  - *Reducing emissions from deforestation;*
  - *Reducing emissions from forest degradation;*
  - *Conservation of forest carbon stocks;*
  - *Sustainable management of forest;*
  - *Enhancement of forest carbon stocks.*

  PLUS preparation & cross-cutting activities
- **How** are activities implemented?
  - Approach will affect ecosystem co-benefits
  - Tools / measures to safeguard & enhance
  - (& monitoring & adaptive management)

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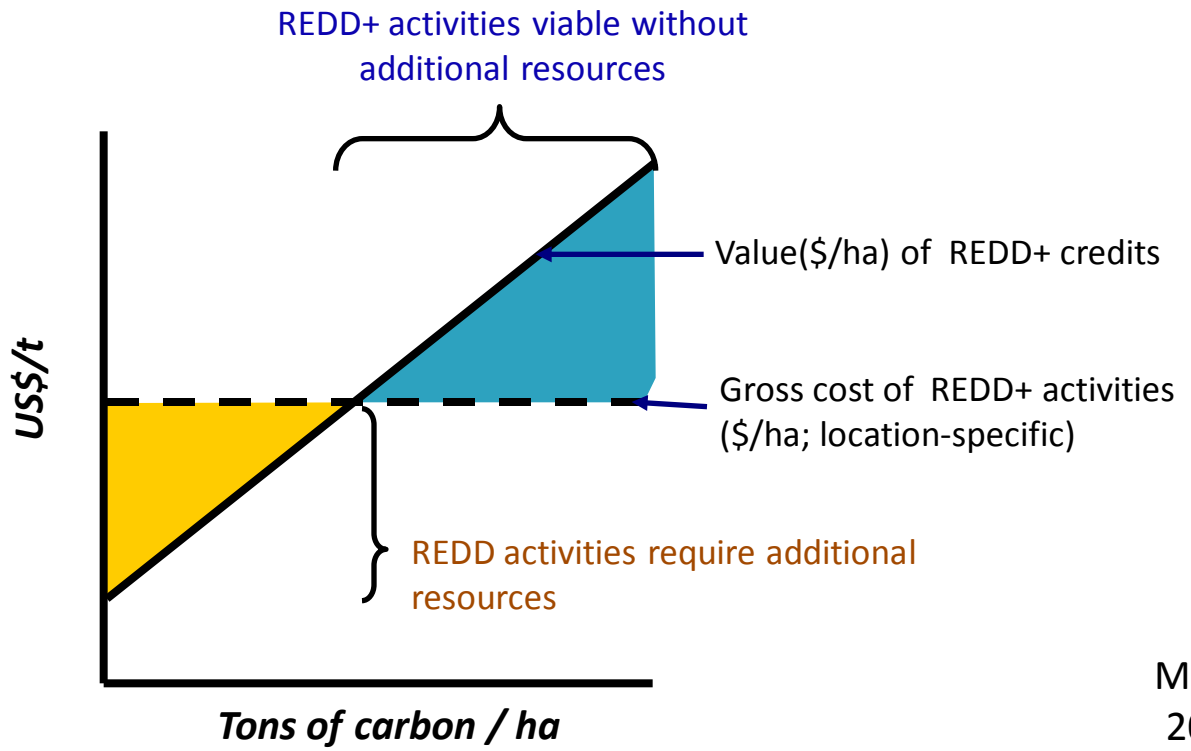
Where: not all forests are equally likely candidates for REDD+ implementation



Miles & Kapos 2008, *Science*

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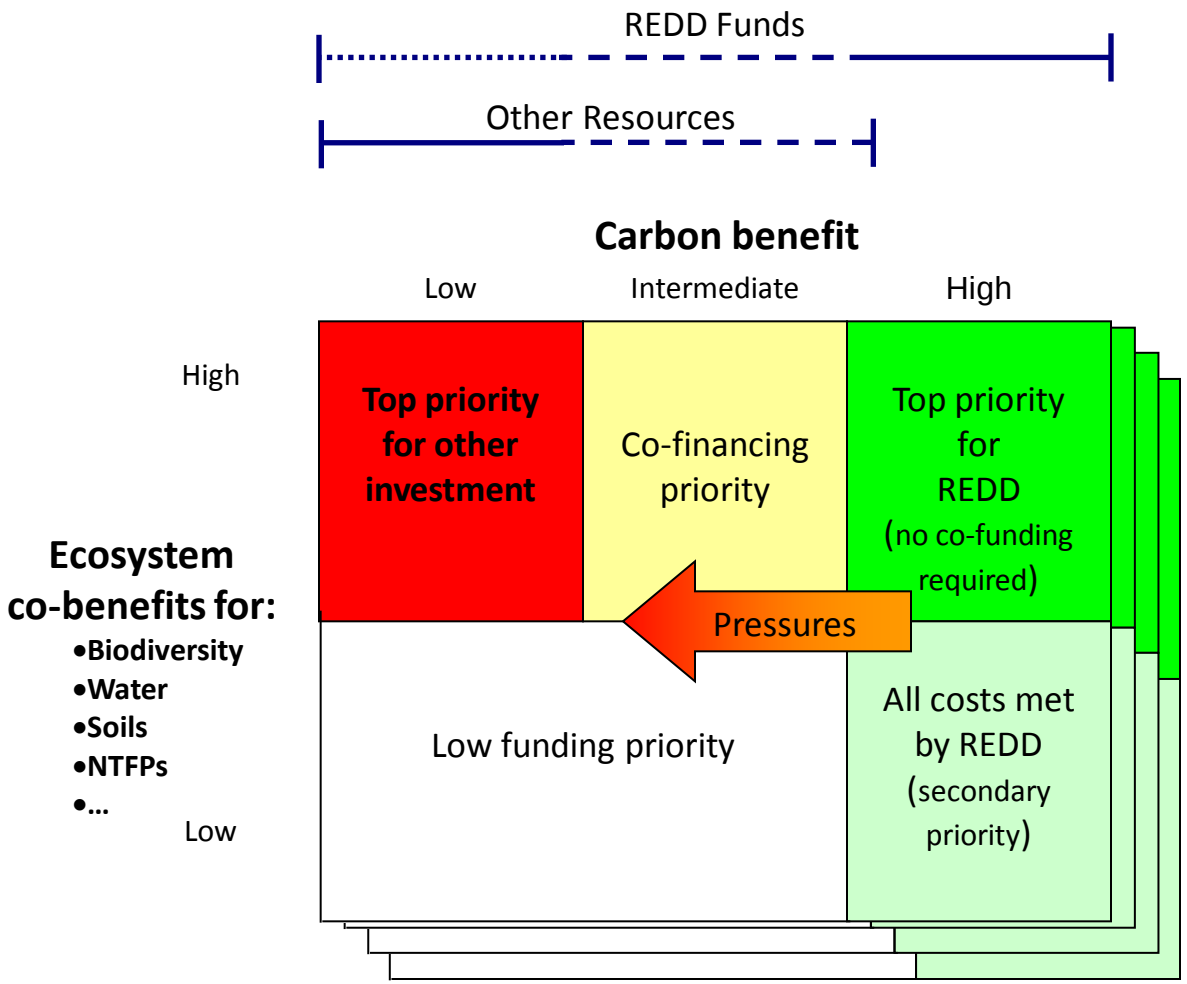
Where: Investment decisions will influence ecosystem co-benefits



Miles & Kapos 2008, *Science*

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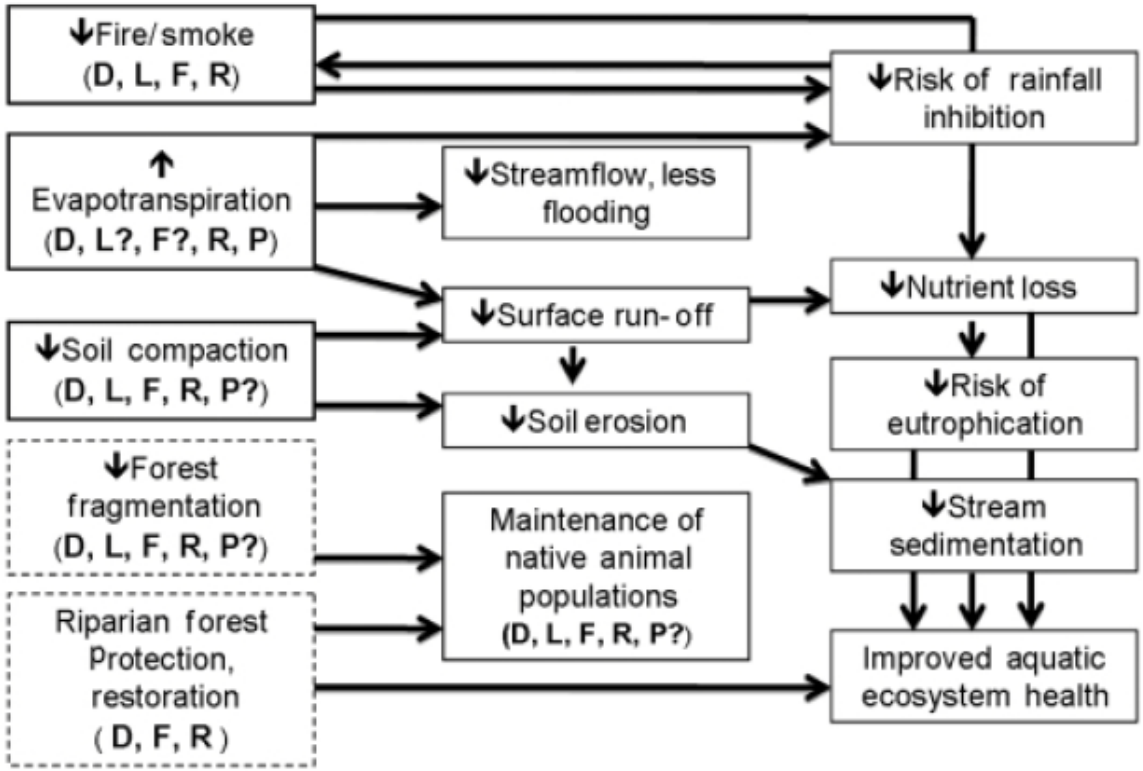
What & how: activity & approach will influence ecosystem co-benefits

REDD Interventions:

D = ↓Deforestation, **L** = ↓Logging damage, **F** = ↓Forest fire, **R** = ↑Forest regeneration

P = ↑Tree plantations



Stickler *et al*. 09 *Global Change Biology*

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Preparation stage

Which ecosystem co-benefits are valued?

- Institutional arrangements
- Range of stakeholders involved

What knowledge on impacts?

- Capacity building plans
- Scope of policy analysis

Are ecosystem co-benefits planned for?

- Forest definitions
- Goals of demonstration activities
- Goals of priority-setting analysis

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Options to support ecosystem co-benefit delivery

… in preparation stage:

- acquiring and sharing **data** on biodiversity and ecosystem services
- taking the likely impacts on biodiversity and ecosystem services into account when **selecting REDD+ approaches**
- defining **goals** for ecosystem co-benefits delivery
- identifying **institutional responsibilities** for these goals
- designing cost-effective **monitoring systems** to allow assessment of the goals
- **planning for adaptive management**

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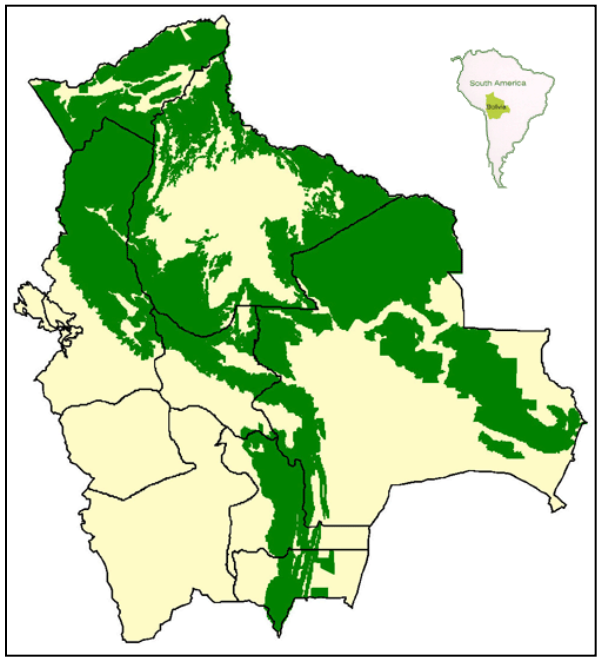
Tools: metadatabase of spatial data

Example: Bolivia

Many good map datasets exist
Diverse stakeholders responsible

Neutral facilitator to create metadatabase and share with all:

- Content
- Format
- Methods
- Custodian
- Potential use in REDD+ decision-making to safeguard & enhance co-benefits



Source: CADEFOR, Bolivia.
http://www.cadefor.org/en/certfor/mapaforbol.php

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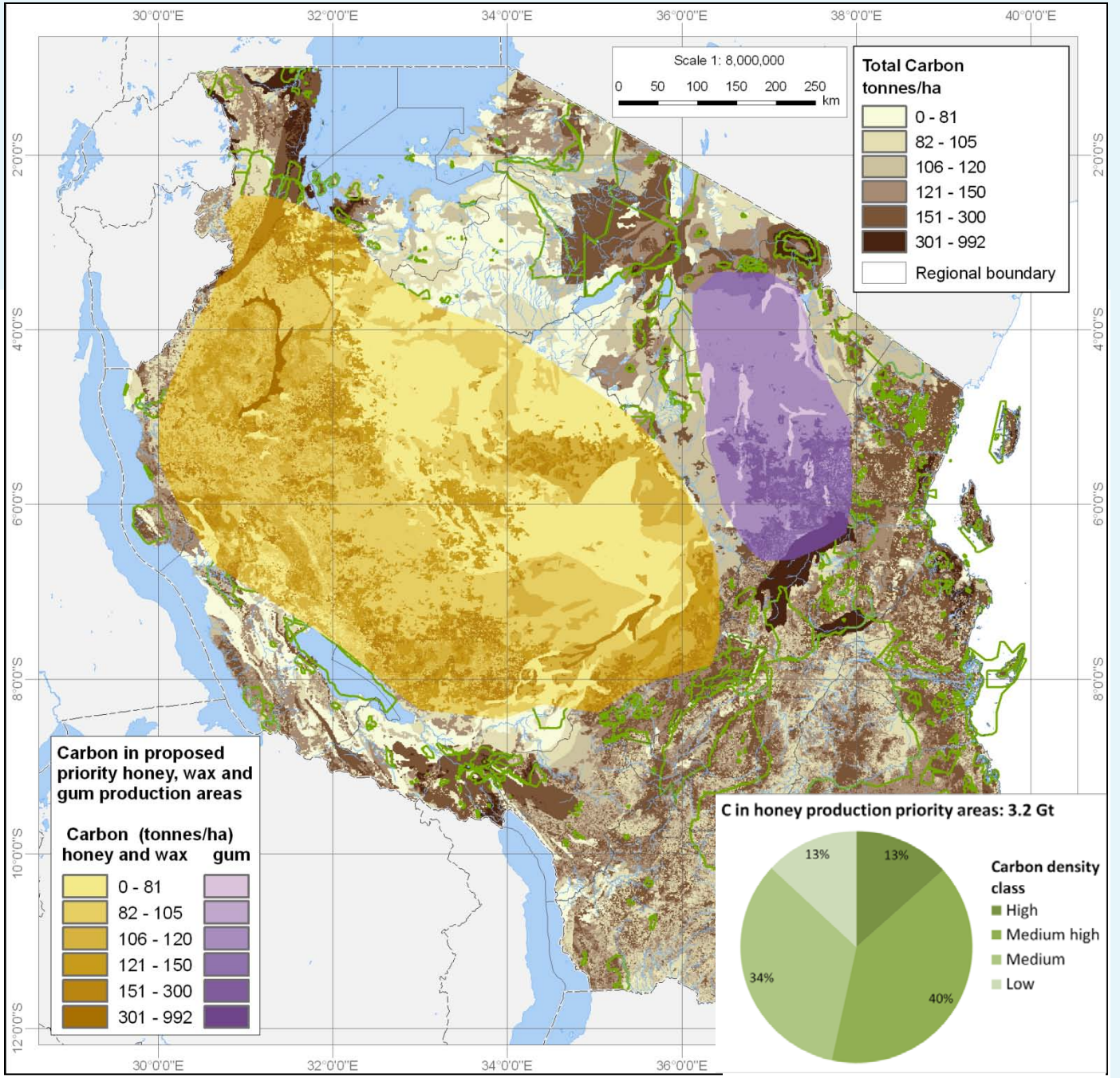
Tools:
ecosystem service mapping.
Carbon overlaid with priority areas for **honey, beeswax and gum arabic** production
(Tanzania National Land Use Planning Commission 2006)



Options to support ecosystem co-benefit delivery

… when making decisions on REDD+ implementation:

- **attention to ecosystem service issues** when deciding how to implement the REDD+ strategy
- **participatory planning** with local stakeholders to ensure that local ecosystem co-benefit values are understood and taken into account
- **communication** to all stakeholders of potential impacts and trade-offs
- **policies, tools and measures** to safeguard and enhance the delivery of ecosystem co-benefits
- absorb **lessons from the demonstration phase** and ensure **adaptive management** for ecosystem co-benefits

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Reducing deforestation

Tool	Ecosystem co-benefits	Costs and trade-offs
Spatial priority-setting	Any selected co-benefits	Trade-offs, but explicit. Analysis may slow decisions.
Encourage agroforestry near natural forest	Biodiversity	Restricts choice; also risks to forest
Promote conservation agriculture	Soil formation, nutrient cycling, freshwater	Revision of agricultural extension
Adopt agricultural certification standards	Biodiversity, soil formation, freshwater	Costs v premium for certified goods

Table 7: Ecosystem co-benefits tools and measures – reducing deforestation

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Forest carbon stock enhancement

Tool	Ecosystem co-benefits	Costs and trade-offs
No clearing of native vegetation	**All co-benefits**	Minimal
Spatial priority setting for FLR & guidance	**Any selected co-benefits**	Analysis may slow decisions
Restoration of degraded forest	Possible: **food, wood/fibre, fuel, biodiversity, freshwater**	Minimal cost, but fairly slow
Favourable management within plantations	Structure is more natural (e.g. mixed age and mixed species stands, understory exists). **All co-benefits**	Slower carbon storage, but more resilient in longer-term
Restoration instead of planting		

Table 11: Ecosystem co-benefits tools and measures – carbon stock enhancement (A/R)

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Tools: score card for A/R activities

Approach	Ecosystem service – result and speed of delivery							
	Biodiversity		Water regulation & quality		Soil		NTFPs	
Natural regeneration	5	☆	5	☆	5	☆(☆)	4	☆
Assisted natural regeneration	5	☆☆	5	☆☆	5	☆☆ (☆)	4	☆☆
Planting native species	4	☆☆ ☆	5	☆☆ ☆	4	☆☆ ☆	5	☆☆ ☆
Planting non-native species	2	☆☆ ☆	5	☆☆ ☆	3	☆☆ ☆	3	☆☆

Key:

Final result of a/r: 1 (low provision of service) to 5 (high provision of service)

Speed of delivery: ☆ (slow) to ☆☆☆ (rapid)

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Summary

- Where?, What REDD activity? and How implemented? affect co-benefits
- Design phase, especially on ‘where’ and ‘what’, avoids inadvertent harms
- Wide engagement & buy-in is crucial
- Trade-offs often exchange short-term use of resources for long-term sustainable use
- …but some opportunities for co-benefits at minimal cost
- Limited knowledge: monitoring of impacts & adaptive management

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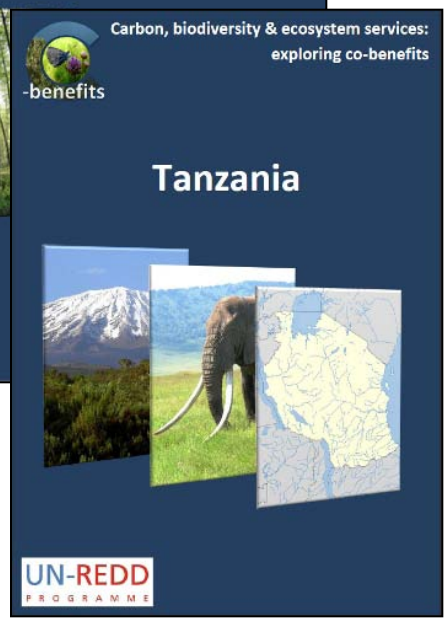
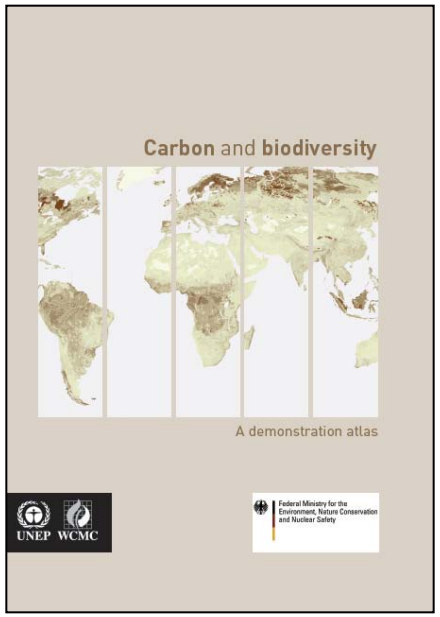
Resources

http://www.unep-wcmc.org/climate/publications.aspx





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Thank you for listening!

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Reducing forest degradation

Tool	Ecosystem co-benefits	Costs and trade-offs
Spatial priority-setting for action on illegal logging	Any selected co-benefits	Trade-offs, but explicit. Analysis may slow decisions.
Restoring water table in drained peat swamp forests	All ecosystem co-benefits	Major carbon benefits possible for minimal costs

Table 8: Ecosystem co-benefits tools and measures – reducing forest degradation

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Sustainable management of forest

Tool	Ecosystem co-benefits	Costs and trade-offs
Capacity building for reduced-impact logging	All –especially soils, freshwater, flood regulation, biodiversity	**Wood** yields over longer timescale **All other services**: RIL still affects forest structure
Ecoforestry	As above, less change to forest structure	As above
Certification schemes	Depends on choice of standard	Cost of verification by external certifiers
Adaptive management for climate resilience	More likely long-term provision of all co-benefits. Biodiversity (genetic diversity)	Training of forest managers and workers

Table 10: Ecosystem co-benefits tools and measures – sustainable management of forest [for timber]

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Conservation of forest carbon stocks

Tool	Ecosystem co-benefits	Costs and trade-offs
Systematic conservation planning tools	Any selected co-benefits	Trade-offs, but explicit. Analysis may slow decisions.
PA management effectiveness tools	Any selected co-benefits	Management and monitoring for some co-benefits risks harming others
Capacity building on ecosystem co-benefits for protected area staff and stakeholders	Any selected co-benefits	

Table 9: Ecosystem co-benefits tools and measures – conservation of forest carbon stocks

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Protected area effectiveness?

Bukit Barisan Selatan National Park

Gaveau *et al*. (2007) *Biological Conservation* 134, 495–504

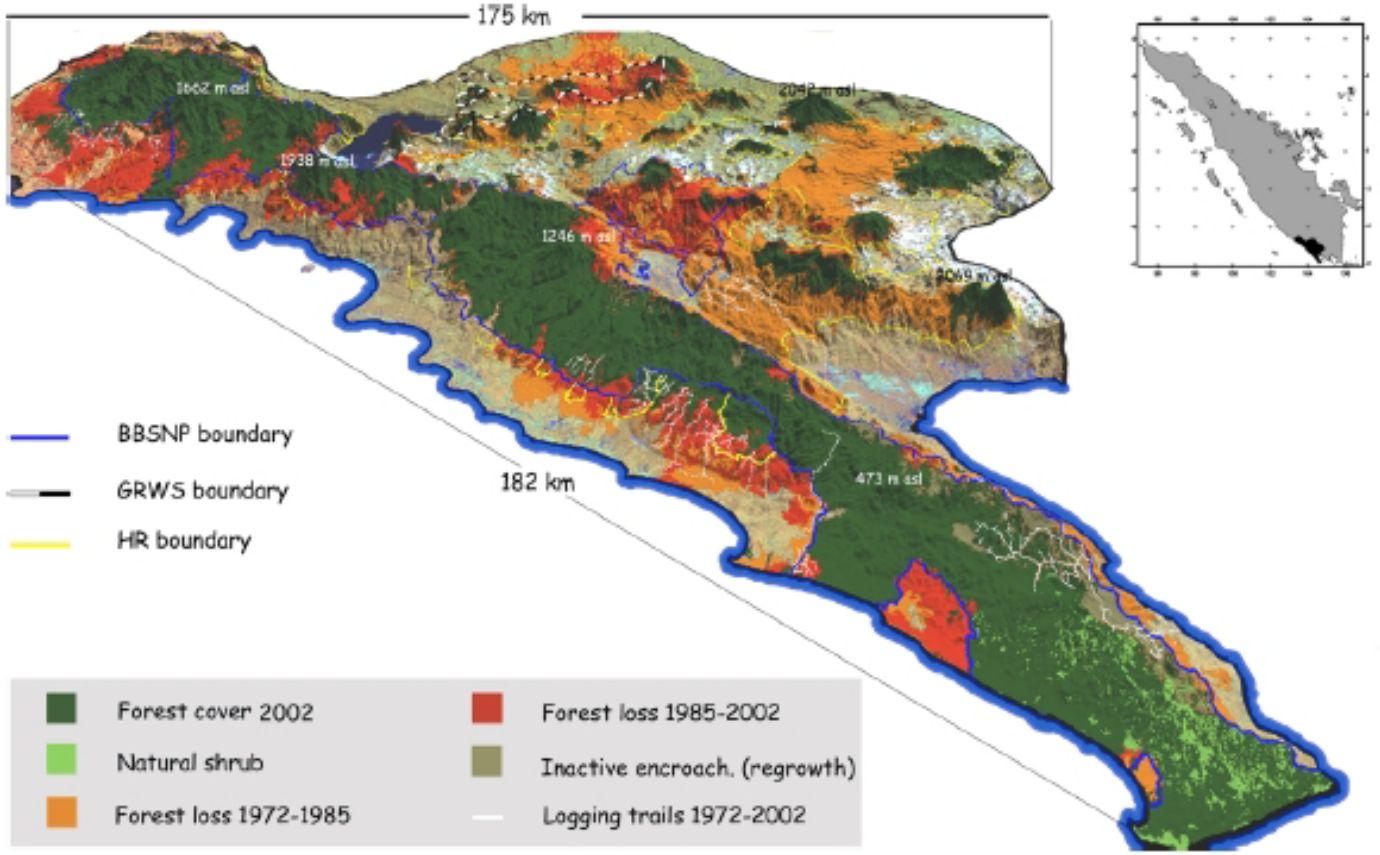

Fig. 1 – Patterns of deforestation in a 1.17 million ha area in southwest Sumatra, showing the reduction and fragmentation of the BBSFL from 1972 to 2002, the logging trail network (mostly active during the period 1972 to 1985), and forest re-growth in the BBSNP for the period 1985 to 2002. The data are overlaid on a DEM and the 2002 LANDSAT ETM+ imagery with bands 3 (red), 4 (NIR) and 5 (SWIR) combined to generate a false colour background.