Reference levels for peat swamp forests

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In peatlands, dead plant material accumulates to thick organic soil layers under permanent water saturation

Key role in climate

- Peatlands are the most concentrated and most important reservoirs of terrestrial carbon
- In their peats they store twice as much Carbon (550 Gton) as all global forest biomass.
- Drained and degraded peatlands cover 0.3% of world land area
- They emit, however, 2 Gton CO_2/year = 6% of the global anthropogenic CO_2 emissions
- → Drained and degraded peatlands are emission hotspots!

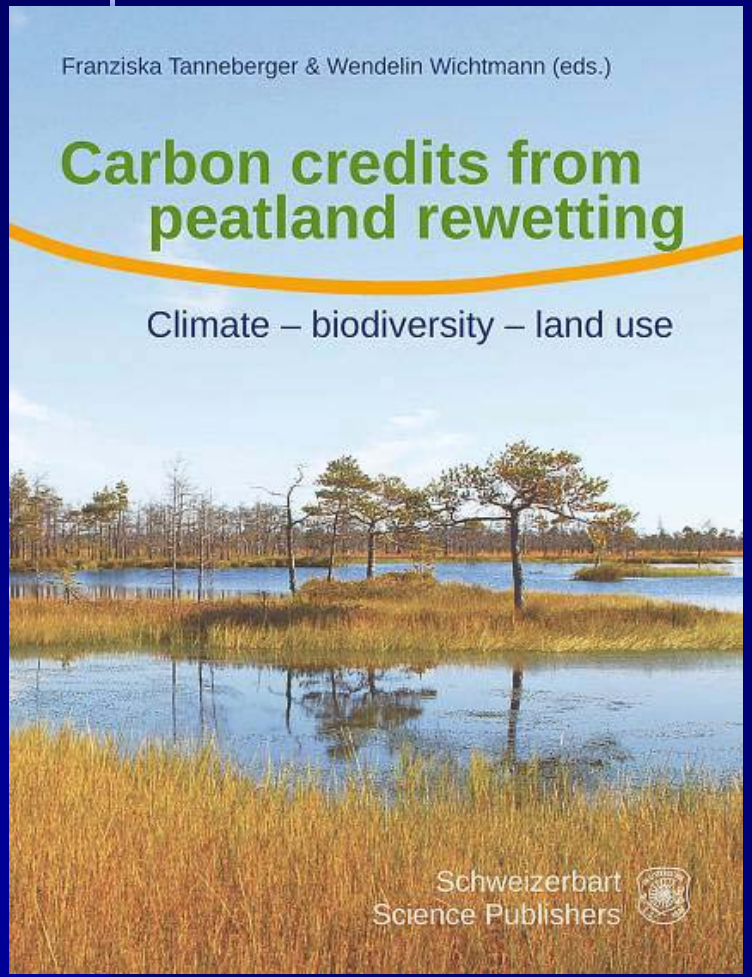
Why Belarus?

Among the countries of the world, Belarus ranks

- Nr. 15 in terms of peatland area (22,352 km^2)
- Nr 8 in terms of peat emissions (41 Mt CO_2/yr)
- Nr 3 (after Indonesia and Estonia) in terms of peat emissions per area (1.99 t CO_2/ha)

- In recent years Belarus has gained much experience in peatland rewetting (36,000 ha) and peatland MRV.

Experiences summarized in:

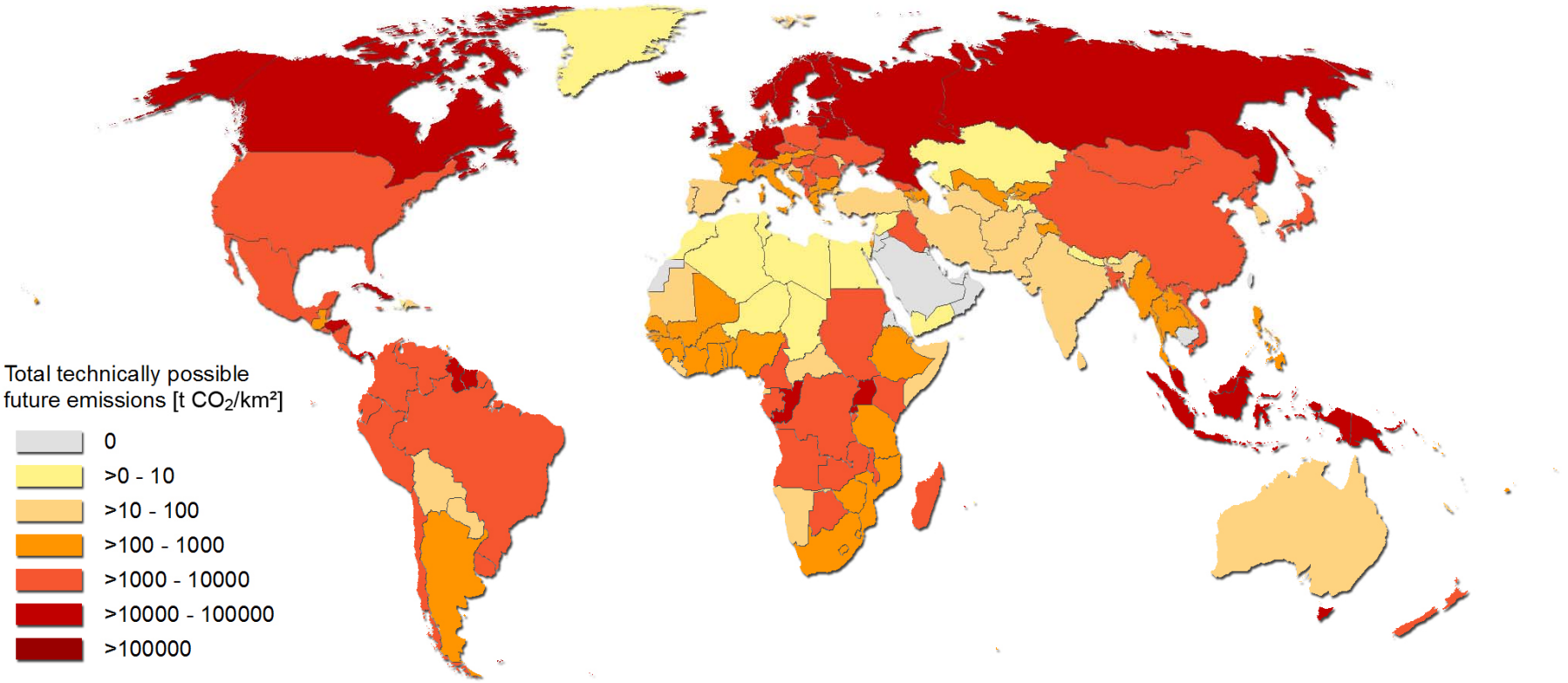


Carbon credits from peatland rewetting
Climate - biodiversity - land use

Science, policy, implementation and recommendations of a pilot project in Belarus

2011. XII , 223 pages, 41 tables, 30 info boxes, 100 mostly coloured figures , 28x21cm

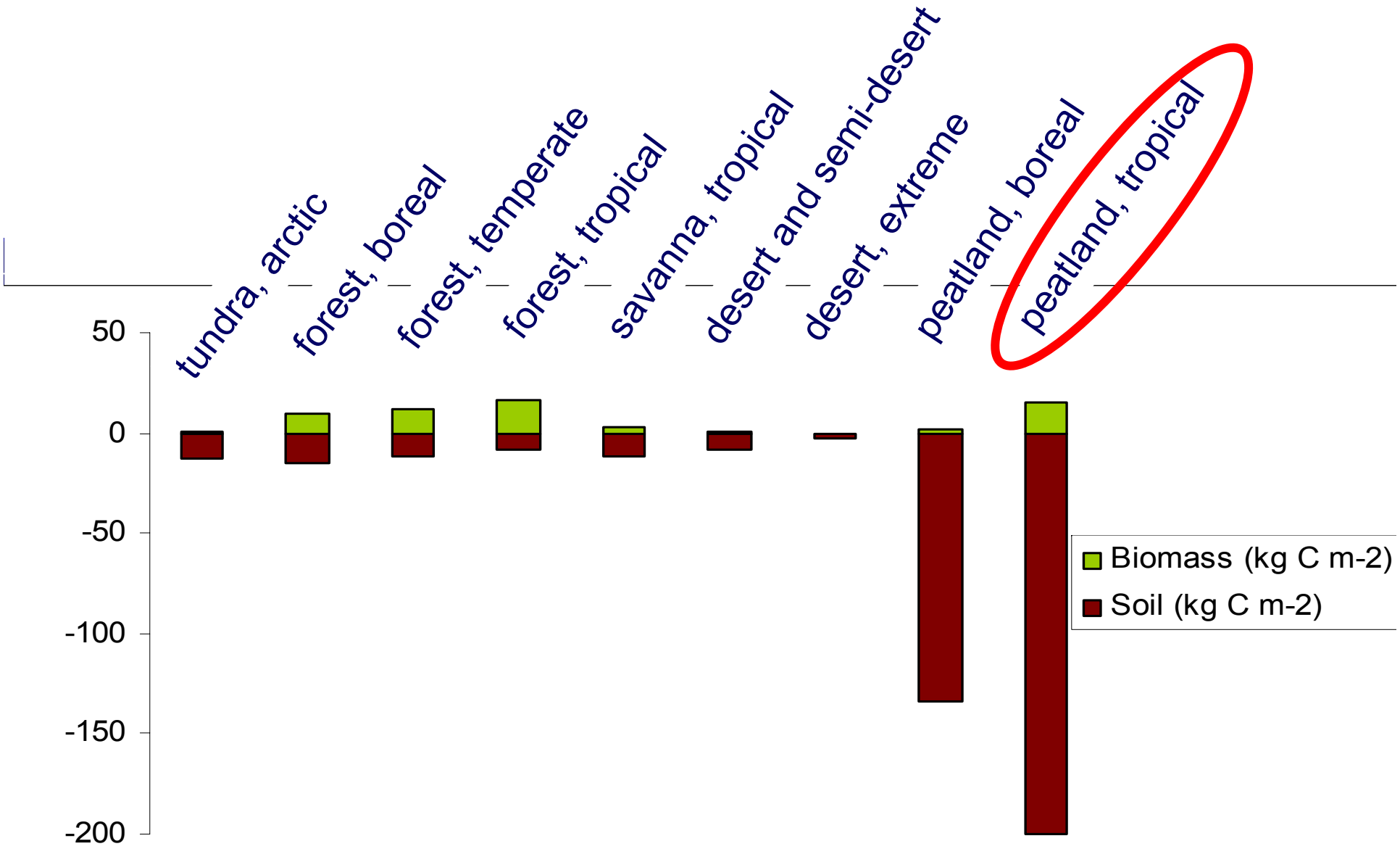
Peat swamp forest in Belarus



Many REDD+ countries are peatland hotspots and huge potential peatland CO_2-emittors (see map)

Lessons learned

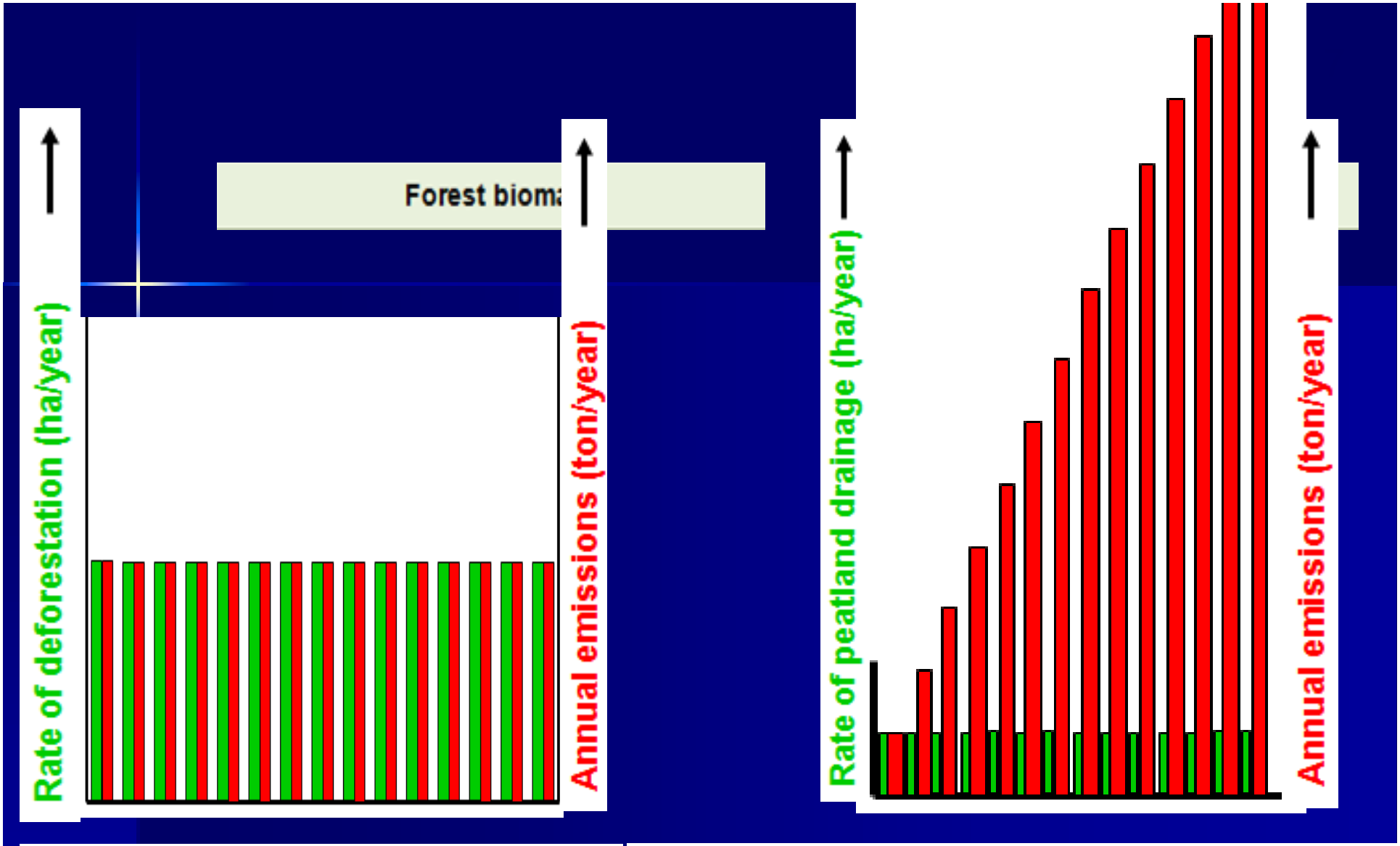
- Peatlands contain disproportional amounts of Carbon in their peat soils
- This carbon pool is easily mobilized by drainage and deforestation
- Emissions from degraded peat soils continue for very long time after conversion
- This has large consequences for reference levels and MRV



Peatswamps contain disproportional carbon in their soils

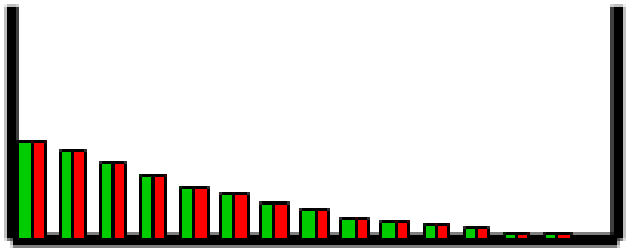
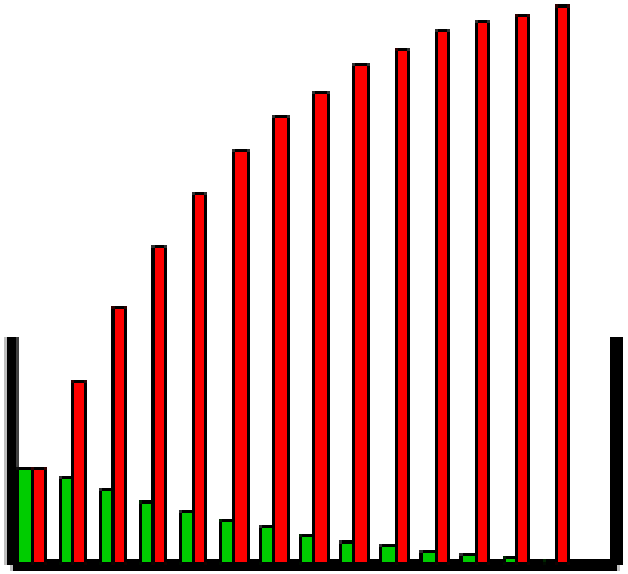
Reference levels

- After clearing and draining, emissions from peatland continue for decades, or even centuries
- To be reported for all these years
- Consequences for recording progress towards reduction targets:
  - emissions from new drainage + ongoing emissions
  - when new drainage stops, emissions continue and peat carbon stock still continues to decline

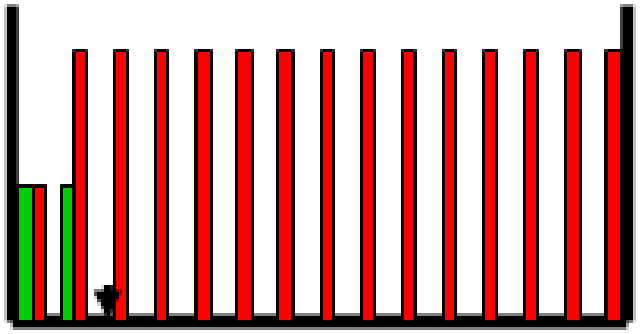


A constant rate of deforestation keeps annual GHG emissions constant because deforesting an area implies a once-off emission

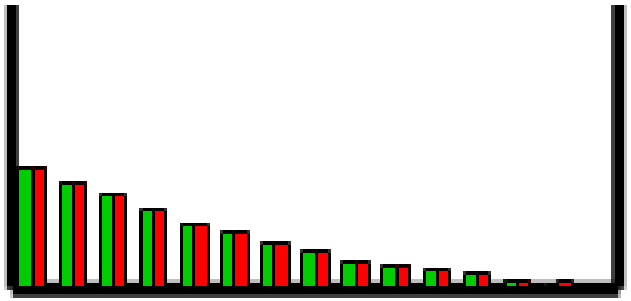
A constant rate of peatland drainage ***increases*** annual GHG emissions because the emissions from newly drained peatland ***add*** to those of already drained peatland.

Forest biomass	Peatland soil
	
A **decreasing** rate of deforestation and forest degradation **decreases** annual GHG emissions.	A **decreasing** rate of peatland conversion and drainage ***increases*** annual GHG emissions because the emissions from newly drained peatland add to those of already drained peatland.

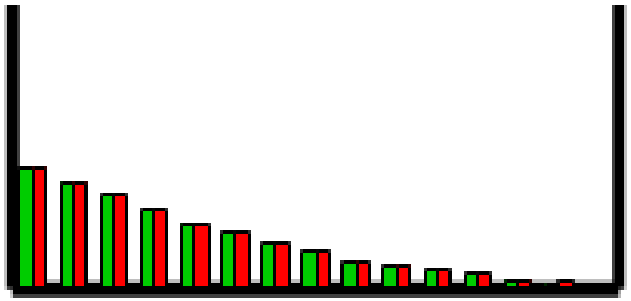
Stopping deforestation and forest degradation **stops** GHG emissions.



Stopping peatland conversion and drainage expansion does not decrease GHG emissions because existing drained peatlands will ***continue*** emissions at the same level.



Decreasing the **rate of deforestation** is indeed Reducing Emissions from Deforestation and forest Degradation.



But only ***decreasing the absolute area*** of drained peatland is Reducing Emissions from Deforestation and Degradation.

REDD+ on mineral soils means:
decrease deforestation and degradation

REDD+ on organic soils means:
stop all new drainage and rewet already drained soils

Consequences for REDD+

Only way to reduce emissions from peatlands:

1. **Prevent** any further peatland degradation in order **to maintain** annual GHG emissions from peatland on the status quo level;

and simultaneously

2. **Rewet** already degraded and drained peatlands in order **to reduce** annual emissions from peatland.

Priorities for reduction

1. **Preventing further peatland degradation:**

- No more conversion: undisturbed peatlands must become **NO GO ZONES**
- Existing concessions must be revoked and shift to already degraded mineral soils

Priorities for reduction

2. Rewetting drained peatlands:

- Restore peat soils where possible
- Paludicultures for severely degraded soils

Peatland reference levels

Include all peatland in REDD+, because “land uses” are intensively interlinked:

- primary peat swamp forests,
- degraded peat swamp forests,
- secondary peat swamp forests,
- deforested peatland areas,
- agricultural areas on peat,
- plantations on peat and
- abandoned agricultural areas on peat.


Damani, Panama, March 2011


Damani, Panama, May 2011


Damani, Panama, June 2011


Damani, Panama, Sept. 2011

Peatland MRV

Simple monitoring can be based on

- peat soil maps: high priority!!
- wall-to-wall remote sensing of land use/cover
- simple conservative algorithms for assessing emission effects of land use change, and
- default emission factors

→ This would be sufficient to guard the current peatswamp emission situation.

Country wide reference levels

- Country wide reference levels make monitoring of “leakage” redundant

→ will strongly facilitate REDD+ on a project level

→ will strongly increase REDD+ financing by the voluntary market (that is currently extremely difficult because of leakage), CDM and NAMAs.

THANK YOU

Reforestation in Indonesia

Rewetting in Indo

Lessons learned

- Peatlands/peatswamps are hotspots: „significant pools“ and require key category analysis
- If you think about REDD+, think about peat!