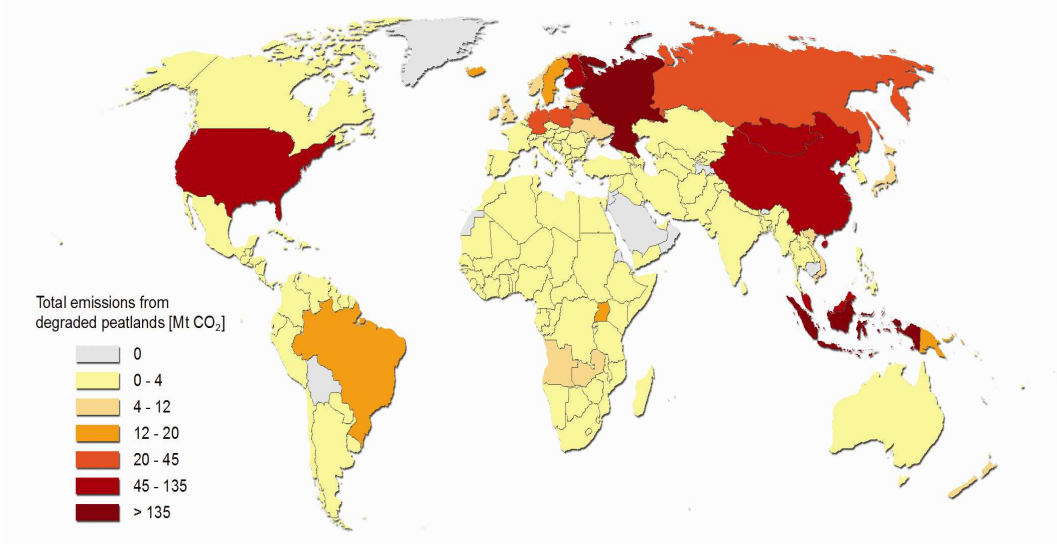
Peatlands: hotspots for emissions reductions

Peatlands play a critical role in climate regulation, storing twice as much carbon as the entire world's forest biomass and emitting large amounts of carbon when drained. Peat carbon stocks are distributed worldwide. The mitigation potential is very significant, but possible future possible emissions as well if no rapid action is taken to protect and restore them. The UNFCCC provides significant opportunities to safeguard and restore these concentrated and important reservoirs of terrestrial carbon.

In undrained condition, peatlands provide diverse goods and services to local livelihoods, are rich in – often unique - biodiversity and play an important role in water regulation. Yet, they are being drained and cut at an alarming rate for forestry, agriculture and mining.

Drained peatlands, covering a mere 0.3% of the global land surface, are already responsible for some 6% of total global anthropogenic CO2 emissions. The mitigation potential is significant, but the future possible emissions as well.

Figure 1: Total emissions from degraded peatlands 2008 (Mtons CO_2).



Emissions from degrading peat 2008

Country/area	(Mton CO_2/a)
Indonesia	500
Russia European part	139
China	77
USA (lower 48)	67
Finland	50
Malaysia	48
Mongolia	45
Belarus	41
Germany	32
Poland	24
Russia Asian part	22
Uganda	20
Papua New Guinea	20
Iceland	18
Sweden	15
Brazil	12
United Kingdom	10
Estonia	10
Ireland	8
Lithuania	6
Netherlands	6
Norway	6
Vietnam	5
Ukraine	5
Zambia	5

Source: Joosten, H. 2010. The Global Peatlands CO2 Picture, Wetlands International, Ede

UNFCCC mechanisms for reducing emissions from peat soils

REDD+ and NAMA activities that reduce or avoid greenhouse gas emissions from peatsoil degradation can play a major role in combating climate change at relatively limited costs. Emissions from drained peat soils can be reduced by the conservation of undisturbed peatsoils and by rewetting of drained peatsoils. REDD+, NAMA's and adaptation programmes can also facilitate to maintain the important role of peatlands for water regulation, provision of diverse goods and services to local livelihoods and protect their rich, often unique biodiversity. Lowland peatlands constitute important water buffers against flooding and salt water intrusion.

Prevention measures are always more effective and efficient rather than rehabilitation after degradation. Restoration of drained peatlands can also not be used to justify new conversions of intact peat swamp forests, because on a per hectare basis carbon losses from conversion and drainage are generally (much) higher than the emission reductions achieved through restoration.

For developed countries, agreement among negotiators was reached in Cancun to allow countries to reduce their emissions from peatlands for meeting their targets under the Kyoto Protocol. We hope for a COP-decision on this in Durban. Wetlands International calls for mandatory accounting of emissions and emissions reduction from peat drainage.

Practical, ready implementable MRV system

Peatland emissions will increase fast if no radical stop of peatland conversion and further degradation is achieved. This urges to come to a practical, readily implementable MRV system. Certainly with respect to reducing emissions from peat soil degradation we should take care that 'the perfect does not become the enemy of the good'.

An increase of emissions of peat swamp areas may take place in three ways:

a. by removing (substantial) tree biomass from a peatswamp;
b. by increasing drainage from the peatlands;
c. by fire.

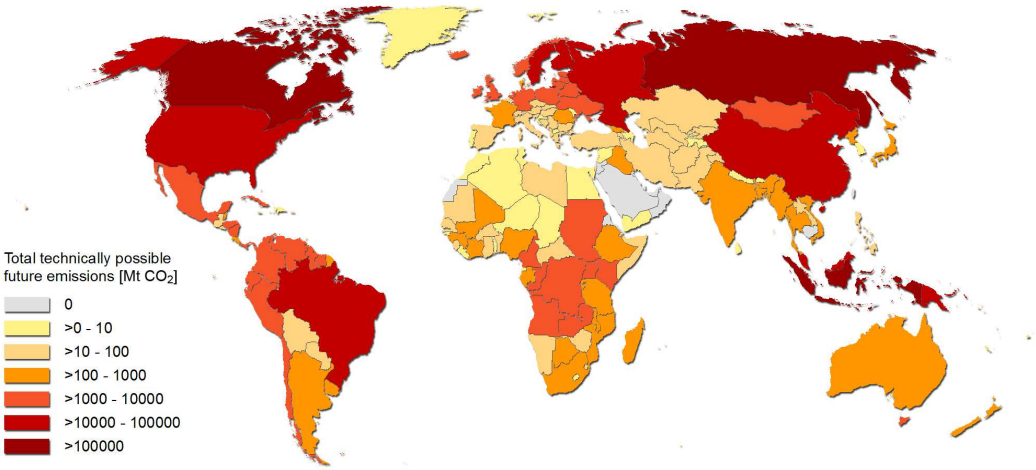
All these activities and processes can easily be monitored in the framework of REDD+, because they are associated with changes in crown cover of forests on peat soil and/or expansion or alteration (intensification) of drainage structures (canals/ ditches) in peatlands. A simple yet meaningful system of monitoring peatlands at the national level can be based on (existing) maps or atlases, extended with higher resolution data.

This information can be combined with:

- wall-to-wall remote sensing of land use and land cover change using high-resolution satellite imagery;
- simple conservative algorithms for assessing the emission effects of land use change, and
- default emission factors for the identified types of land use/cover that can be extracted from the rapidly expanding and increasingly consistent literature.

On a district and project level, this system could be refined further, e.g. by using (direct) water level and subsidence measurements to assess emission reductions and carbon removals related to rewetting and reforestation activities. Further knowledge gain will over time enable further refinement of the monitoring system.

Figure 2: Total technically possibly future emissions from degraded peatlands (Mtons CO_2).



Source: Joosten, H. 2010. The Global Peatlands CO2 Picture, Wetlands International, Ede

Emissions from peatlands are ongoing after drainage and can continue for decades, even centuries. Any new drainage adds additional emissions.

Potential emissions are significant in all regions of the world, see figure 2.

More information:
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