Impacts of Climate Change: Deforestation

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Introduction

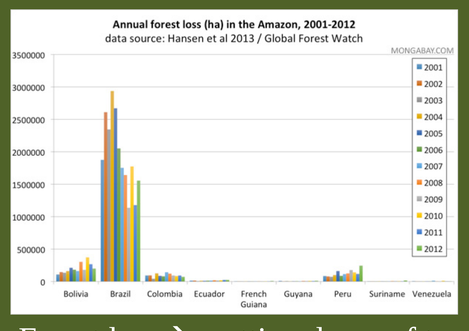
Deforestation is the process of clearing forestlands for varying land utilizations *(2)*. It has been a major issue for decades and continues to cause numerous environmental and economic problems. As the area of forested land decreases rapidly, carbon is released into the atmosphere, reflecting increasing concerns for global warming and climate change *(1)*. This is because forests are carbon sinks. By deforesting, there are less trees to take in carbon dioxide as well. The major initiative to reduce emissions is REDD- Reducing Emissions from Deforestation In Developing Countries and it works by giving incentives for using forest resources in a way that does not release carbon dioxide emissions (*1*).

Table 1: Annual Change in Forest Area by Region and Subregion, 1990-2010

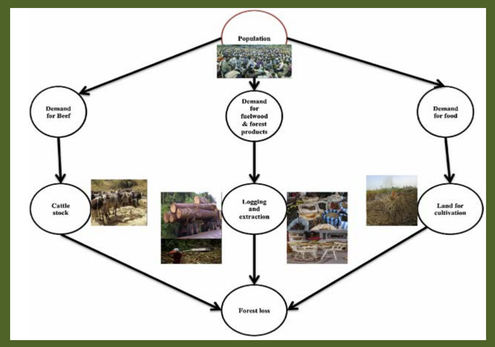
Region/Subregion	1990-2000		2000-2010	
	1,000 ha/year	%	1,000 ha/year	%
Eastern and Southern Africa	−1,841	−0.62	−1839	−0.66
Northern Africa	−590	−0.72	−41	−0.05
Western and Central Africa	−1,637	−0.46	−1,535	−0.46
Total Africa	**−4,067**	**−0.56**	**−3,414**	**−0.49**
East Asia	1,762	0.81	2,781	1.16
South and Southeast Asia	−2,428	−0.77	−677	−0.23
Western and Central Asia	72	0.17	131	0.31
Total Asia	**−595**	**−0.10**	**2,235**	**0.39**
Russian Federation (RF)	32	ns	−18	ns
Europe (excluding RF)	845	0.46	694	0.36
Total Europe	**877**	**0.09**	**676**	**0.07**
Caribbean	53	0.87	50	0.75
Central America	−374	−1.56	−248	−1.19
North America	32	ns	188	0.03
Total North and Central America	**−289**	**−0.04**	**−10**	**−0.00**
Total Oceania	**−41**	**−0.02**	**−700**	**−0.36**
Total South America	**−4,213**	**−0.45**	**−3,997**	**−0.45**
World	**−8,327**	**−0.20**	**−5,211**	**−0.13**

Source: FAO (2010)

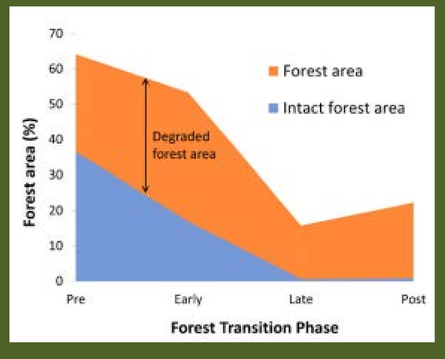
Africa and South America have been experiencing extensive forest loss in comparison to other continents (*3*).



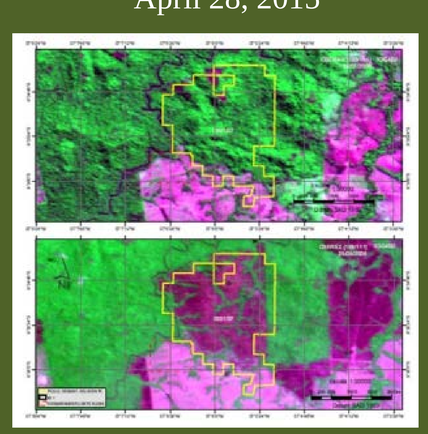
Forest loss→ cutting down of trees to grow crops. It increased drastically because of large scales of farms and building of towns and roads *(4)*.



All the different land uses lead to reduction of forests.
Bigger population → more land for food/lodging needs→ deforestation *(5)*.



The dramatic drop in the intact forest area suggests that the land was more degraded in post-transition countries *(7)*.



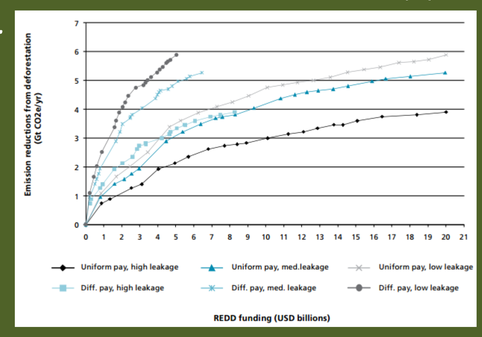
Satellite images of same location at different times. Green= forested land and purple= deforested *(9)*.

Table 1 | Total aboveground carbon stocks in Pg C (and per cent of total) across tropical Africa, America and Asia.

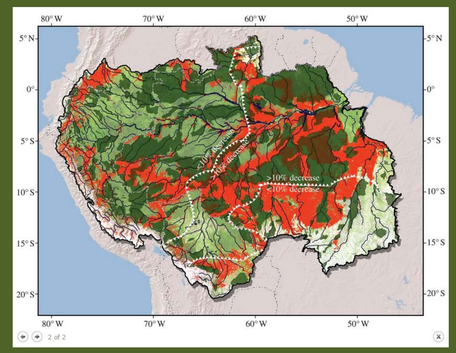
	Tropical Africa	Tropical America	Tropical Asia
Forest	32.4 (54.1)	91.2 (84.2)	35.4 (85.3)
Shrubland and savannahs	27.5 (45.9)	17.1 (15.8)	6.1 (14.7)
Total	59.8 (100)	108.3 (100)	41.5 (100)

Forest (International Geosphere–Biosphere Programme (IGBP) classes 1–5) and other woody vegetation (IGBP classes 6–9).

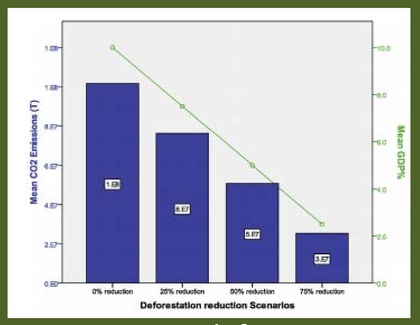
Clearing of forests→ large amounts of CO_2 released. Most carbon comes from forests being cleared than shrub lands and savannahs *(6)*.



REDD is a way to reduce emissions of green house gasses from deforestation. Even small amounts of funding for REDD can lead to a significant amount of reductions in emissions. Initially, reductions will be cheap, but to achieve further reductions, it will cost more money *(8)*.



Change in precipitation as a result of deforestation in Amazon Basin. Deforestation changes regional climate & precipitation *(10)*.



Four scenarios on deforestation reduction- as deforestation lessens, CO_2 emissions decrease but economic consequences are negative as contribution of forestry to GDP/employment drops *(5)*.

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